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The 'Genesis' of a New World

BEA previews software that creates customized business applications

BY DAVID WORTHINGTON

The Three Gorges Dam may have been built to control the flooding of the Yangtze River, but it did not prevent BEA Systems from inundating Shanghai with announcements during its BEAWorld conference there Dec. 12–13.

The discussions at the conference centered on BEA's Project Genesis, its Dynamic Business Applications platform. Genesis' aim is to make it possible for business applications to conform to the way people work by combining BPM, SOA and Web 2.0 social computing technology, enabling users to initiate changes without incurring lengthy IT cycles.

As part of the effort, BEA delivered updates to its AquaLogic and WebLogic products lines, a preview release of Service Component Architecture for WebLogic Server 10.3, and details about its forthcoming SaaS platform. It also introduced new Eclipse-based tooling for AquaLogic Event Server.

AquaLogic Enterprise Security 3.0 consolidates policy management activities into a single user interface, and offers configurable attribution retrievers for LDAP and relational database management systems and new security service modules for application integrations, business processes and databases. Administrators may now specify how external enterprise policy information is integrated with defined security policies.

"Taking authorization management out of the hands of application development teams and centralizing it into a standards-based framework is one of the first things architects should be thinking about when designing their SOA," noted Earl Perkins, research vice president with Gartner, in a prepared statement.

Updated features of AquaLogic Service Bus 3.0 include an enterprisewide service network comprising multiple SOA domains for location-independent access to services, overhauled embedded management and quality-of-service facilities, reworked native transports for ERP applications purposed to help IT build composite applications, and a unified design environment for business processor management and SOA.

The ESB also integrates with BEA's AquaLogic BPM Suite and SOA governance solutions. It will become generally avail-

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Agile Principles Are Changing Everything

From requirements to tools, development ideas have been turned on their head

BY JENNIFER DEJONG

There's an irony about agile development. There is no hard evidence that it produces better software, faster. And formal adoption rates, admittedly hard to measure, don't reach the 20 percent mark. Yet the ideas that underpin agile development—defining requirements incrementally, writing software in short stints, seeking customer feedback, testing code as it's written, frequent builds—have spread like wildfire. They are widely accepted as sound development practices, even among teams that have not formally adopted them.

"Agile principles have become IT best practices [for software development]," said Scott Ambler, agile practice leader for IBM.

Based on interviews with more than 20 analysts, consultants, developers and tool makers, SD Times found that the groundswell of interest in agile practices is changing every aspect of how software is pro-

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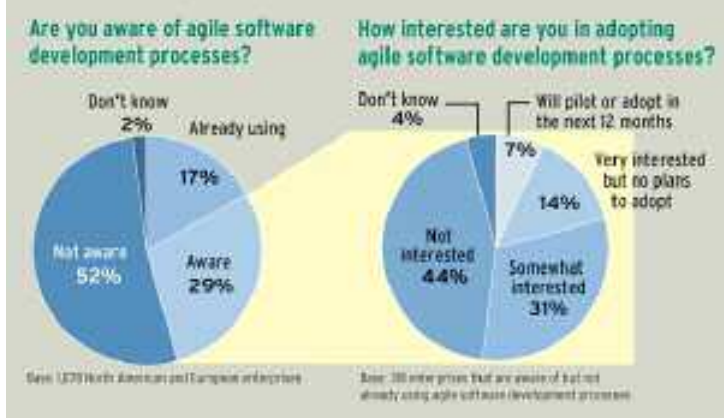
The Impact of Agile

FIRST OF A THREE-PART SERIES

TODAY: Agile Changing Everything
JAN. 15: New Roles, Rules Required
FEB. 1: Putting a Slant on Tools

AGILE ADOPTION RATES REMAIN LOW



Note: Forrester believes agile adoption is actually higher than reported in this study. Based on its interactions with enterprise IT organizations, Forrester estimates that most large enterprises have some projects using agile, but very few larger enterprises use agile for most of their projects.

Source: Forrester Research, Business Technographics September 2006 North American and European Software Survey

Web Up, SCO Down In 2007

BY ALAN ZEICHICK

The rise of scripting languages, the fall of SCO. The war between REST and WS-*. Windows Vista whimpered while the Mac roared. Those are some of the key stories that SD Times followed last year.

We expected, frankly, the big story of the year to be Windows Vista, but as we look back through our notes, it was only one of about 11 top stories that our reporters and editors followed. Here's what 2007 looked like from our perspective.

1. Dynamic languages are on the rise. We went into 2007 knowing that Ruby would be a popular topic, thanks to Ruby on Rails, and that JavaScript was resurgent, thanks to AJAX-based rich Internet applications. However, we did not anticipate that there would be such broad big-company support for dynamic languages—and there was, from everyone from Microsoft to Sun, CodeGear to Eclipse.

2. HP settled in as a major player in software test. Customers didn't know what to think, when Hewlett-Packard made its play for Mercury Interactive. HP's track record in software has always been spotty, and after its recent management turmoil, many customers were nervous. However, HP seems to have executed the acquisition well, and is now firmly established as a big

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'Volta' Puts a Charge Into Web Applications

New Microsoft toolkit enables declarative tier-splitting

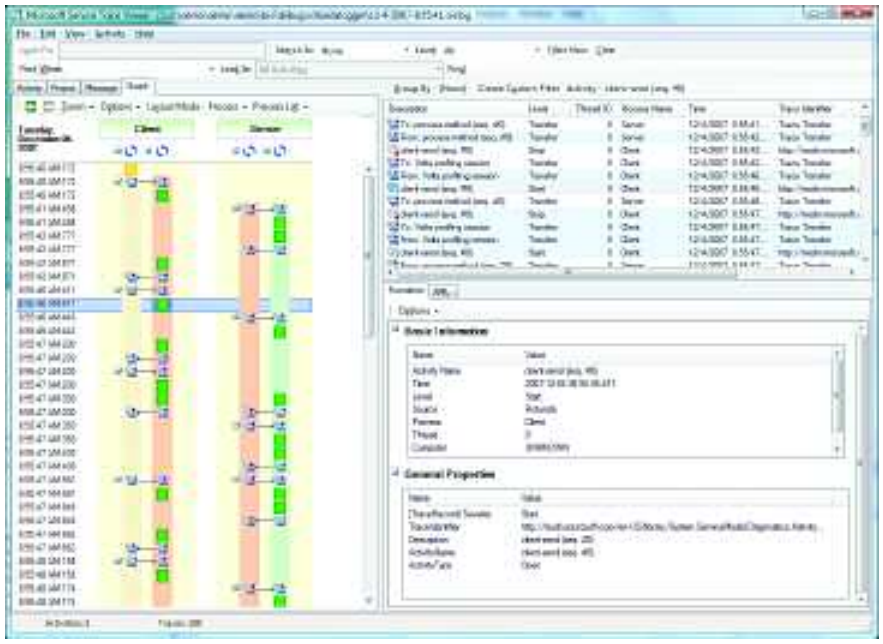
BY DAVID WORTHINGTON

Developers have spent years mastering the ins and outs of programming for .NET. Now they can apply that same skill set to building multi-tier Web applications.

Microsoft in early December released "Volta," a technical preview of a developer tool set for creating multi-tier Web applications using Visual Studio 2008 and .NET. Volta offers a specialized facility for distributing functionality across client and server by way of declarative tier-splitting.

This involves the programmer inserting explicit declarations into the source code, stating which portion of classes and methods should run on the client, and which should run on the server, explained Erik Meijer, Volta's principal architect. Volta inserts communication and serialization code, and moves the annotated code to the appropriate tiers.

"If a developer is building an AJAX application today, there is one [part of it] on the client and one on the server, and they have to create the communications code manually," said Alex Daley, group product manager for Microsoft Live Labs. "With Volta they can focus on the core logic. A Volta application looks like a standard WinForms application in .NET."



Volta's Service Trace Viewer collects information on performance.

Applications can be written using any .NET language to target the Common Language Runtime or JavaScript on the client side, or ASP.NET running on IIS on the server side. Meijer explained that code is rewritten into JavaScript after first being compiled into Microsoft Intermediate Language.

"JavaScript is the right target to add out-of-the-box," said Daley, adding that Microsoft would consider providing additional runtimes in the future.

REAL-WORLD PERFORMANCE

The Volta toolkit integrates with Visual Studio 2008 and imparts end-to-end profiling and testing capabilities. Meijer said that Volta's "automatic instrumentation" of performance and reliability helps developers understand the implications of their architecture.

Developers can see for themselves how a module performs in both client and server roles, Meijer explained, adding, "They don't have to guess what the right tier for it is; they have hard numbers to base their decisions on." They may also set breakpoints on either tier to trace flows of control across distributed systems.

"[Having] one codebase makes normal things like debugging available across the entire application tier," said Daley.

Jeffrey Hammond, a senior analyst with Forrester Research, said there is a possible multicore application for the software. Microsoft's Meijer elaborated, saying, "Programming across tiers and cores is fundamentally the same. Volta already shares the same semantics for its declarative tier-splitting and asynchronous invocation with concurrent programming models for multicore."

Hammond believes that Volta would make the most sense for small teams that do not have a lot of time to invest in architecture up front. "It gets [the application] out the door quickly. From my perspective, the advance is the ability to evolve the application after the fact as it starts to succeed." ▮

Guerrilla Tactics Can Help Dev Teams

BY ALEX HANDY

LAS VEGAS — Architectural change through interpersonal management and process refinement: That mouthful was summarized at a Gartner application development summit here, by researchers who shared their thoughts on improving software development procedures. The moral of their story: Breaking ingrained culture can result in the most rewards.

Gartner group vice president Val Sribar and research director L. Frank Kenney titled their show-opening talk "Agility and SOA: Dancing With Webs." The pair described an amalgam of real-world scenarios, mixed together to show the common problems enterprise development managers encounter.

'CLASH OF APPROACHES'

At the top of that list of conflicts, said Sribar, is the cognitive difference between traditional application developers and the hotshot Web guys. "There's a Web team who reports to the business unit. They've got a set of things they need. They have customer data feeds they need from core systems, or they've got information they want to put into those core systems. And they're coming in every few months asking for these things," he added.

That makes for a difficult situation for the developers running the internal systems. "We have a clash of approaches. One group has a set of methodologies that's iterative. They're delivering every six weeks; they use some agile methodologies. The application people use waterfall, their budgets are yearly, [and] their products are delivered quarterly," observed Sribar.

Kenney added that this is where politics comes into play. When the Web team needs to access customer data, the database team may become worried about data integrity. When major site changes are implemented, the QA team may not be able to keep up, or may not have any test duties for the Web site.

The solution, Sribar explained, is to temporarily shuffle teams to help smooth out creases in the work. He also recommended moving the software organization toward more agile processes.

"Let's take the SOA and data guys and bring them into the Web team, just so they understand the requirements," Sribar said. "At the same time, let's move some of the Web guys to the other side as well, so there's an insight into the agility and what the Web team needs and what the customer needs. I use the term 'guerrilla warfare.'"

This community building can also help to smooth out process design and standardization tensions. "Ultimately, if there's a conflict around how business process should be done, we can show people what the process is," Sribar said. "You really want the business to step up and anoint someone as the person who has the final call on defining processes," he added.

While Sribar and Kenney suggested using the carrot to encourage developer interest in agile processes, Gartner vice president and distinguished analyst Matthew Holte pointed out that the stick was just as important.

"Insanity is rewarding people for doing what they do today and expecting them to do something different tomorrow," Holte noted. "If you do not change their compensation, their reviews, their bonuses and perks...why would you expect them to do anything different than they're doing today?"

Holte described the penalties of failure: "If you reward the acceptors and ignore the resistors, the influence will do nothing. You have not made it unpleasant for these people, so welcome to third-shift maintenance for the rest of your career. You have to isolate these people. There have to be consequences. This is all about being really serious about organizational change." ▮

SD Times Photo: Alex Handy

This remote-controlled robot patrolled the Blue Phoenix booth at the Gartner summit.

Open Java, Open Standards

BY ALEX HANDY

Sun Microsystems has always been slow to change Java. For years, developers howled for generics and annotations, and only in the past three years did these features arrive. So too, had open source zealots been screaming for Sun to make Java into an open standard backed by open source. And finally, in 2007, almost 12 years after the creation of the language, Sun released the language's development kit and runtime environment under GPLv2.

Certainly this was the most momentous achievement in the Java world this past year. But when it comes to the actual day-to-day development of major business applications, open source Java was the last thing on anyone's mind in 2007.

SIMPLIFY, SIMPLIFY

In fact, most enterprise developers spent 2007 revising their plans and scaling back their need for overpriced, overblown Java infrastructure. With OSGi's services platform technology winding its way through the Java Community Process, and Apache Tomcat squarely in the driver's seat when it comes to Java containers, developers had a newfound simplicity in their Java baskets in 2007. While new versions of Enterprise JavaBeans and Hibernate were available even before the year started, many development shops finally found that they didn't need these over-engineered solutions to enterprise problems. And adding JRuby to the mix for a powerful and simple scripting layer on top of a JVM only helps to make Java developers' lives easier, it seems.

That may all change next year, with Java EE 6 and new types of Beans set to emerge. Thanks to the release of Java 1.6 (or Java SE 6) earlier this year, the Java world finally has a runtime environment that is polished and complete, so much so that Sun finally took some time to do performance optimization and monitoring work inside the JDK. That's only appropriate, as JDK 6 will likely be the last version to be handled entirely by Sun developers.

And how can we discuss the year in Java without mentioning the largest and most complex update ever engineered for Eclipse? Version 3.3, code-named Europa, saw more than 2 million downloads between June and the writing of this article in early December. That's certainly the most interest the project has ever gathered around a new release.

Can you blame all those downloaders? When it comes to developing Java, there are certainly many IDE choices. But when it comes to developing enterprise Java applications, Eclipse simply offers too many tools and features to ignore. From RCP tools to the powerful Mylyn project visualizer, Eclipse makes Java cheaper and easier to write. ■

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Microsoft Platform Finally Takes Shape

BY DAVID WORTHINGTON

After several years of delays and indecision, 2007 was the year that Microsoft finally delivered. Long-anticipated products began to materialize—some finished, some previews—as the company dedicated the bulk of its year to fleshing out its platforms for developers.

The story began in January, when Microsoft held the dual launch of Office 2007 and Windows Vista. Despite selling tens of millions of copies of Windows Vista globally, Microsoft faced pushback from OEM partners after some customers expressed strong interest in downgrading new equipment to Windows XP, and worked to put the finishing touches on a service pack as the year drew to a close.

With the advent of Office 2007, Microsoft's Office Open XML (OOXML) specification continued further down the standardization path. OOXML was fast-tracked to the International Standards Organization before the start of the year. Advocates failed to muster enough support in the ISO, but caused a stir of their own instead. Some proponents of Open Document Format accused Microsoft of gaming the standards process, but Microsoft pledged cooperation with ISO and to be responsive to the feedback it received. OOXML's approval remains pending.

THE FUTURE REVEALED?

As MIX07 got under way in Las Vegas at the end of April, Microsoft rolled out Silverlight, its rich media runtime for the Web. Community Technology Previews of the runtimes were made regularly available through its release in September. It was well received by the industry; an ecosystem of developers and ISVs grew around the platform.

The company hesitated to talk about unannounced products for much of the year, demonstrating a changing attitude toward transparency and canceling PDC 2007. It opted to discuss its Dynamic Systems Initiative (DSI) over its "visions" about future technologies. DSI is designed to help companies leverage technology for the good of the business, and create a bridge between business users and IT shops.

More previews became available over the fall, while BizTalk Server 2006 R2 arrived in September, and Visual Studio 2008 went gold in November, along with .NET 3.5.

SQL Server 2008, Visual Studio 2008 and Windows Server 2008 will launch together in Los Angeles on Feb. 27, although SQL Server 2008 isn't expected to ship until the second quarter.

As the year drew to a close, Microsoft began to reveal its future direction, taking the wraps off a model-driven development initiative called "Oslo" that will be a multiyear, multiproduct effort to develop composite application technologies.

Microsoft also announced "Volta," a technical preview of a tool set for creating multitiered Web applications using Visual Studio 2008 and .NET, and rechristened Silverlight 1.1 as Silverlight 2.0, to reflect the changes from the September debut. ■

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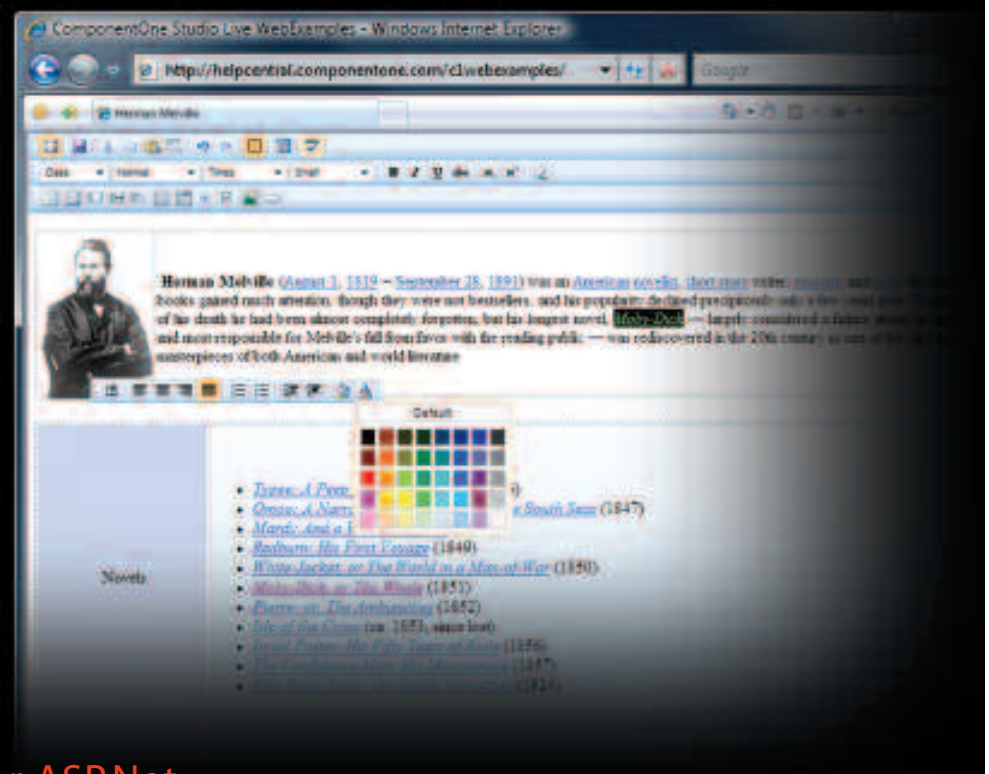

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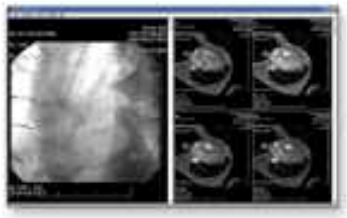

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These SOA Times, They Are Changing

Iona's Artix 5 handles evolving requirements

BY DAVID WORTHINGTON

Anticipating that governance and management could play a greater role in the next phase of SOA deployments, Iona has updated its SOA infrastructure suite to address those needs, releasing Artix 5 in December.

This version attempts to improve the suite in three areas: the ability to provision and manage SOA implementations, interoperability and standards support. Artix is composed of a data services component; an enterprise service bus (ESB); orchestration, mainframe and SOA management components; and a combination registry/repository.

Within the suite, the data services and ESB components have been made more interoperable to eliminate the requirement to code data services with ESB services. Mainframe and CORBA services enablement has been expanded, and Artix Registry/Repository now supports Artix Orchestration processes, as well as Iona FUSE Service Framework services and containers.

The Artix registry/repository includes a customizable repository data model, an improved user interface to simplify IT operations, the ability to publish services to a UDDI V3 registry, and versioning support for services and other repository artifacts.

Iona has adopted the concept of enterprise integration patterns—introduced in a 2003 book by Gregor Hohpe and Bobby Woolf—and has implemented a standard vocabulary for services. The premise behind integration patterns is that integrations are made easier by establishing a consistent vocabulary and visual notation to describe large-scale integration solutions that span different technologies.

Support for BPEL message attachments as well as identity and mail services has been added to Artix Orchestration to facilitate the development of BPEL processes.

"As customers' SOA implementations evolve and the number of services deployed increases, interoperability and the ability to deploy new services quickly becomes critical," Massimo Pezzini, vice president and distinguished analyst at Gartner, said in a prepared statement. "Additionally, the ability to manage a diverse set of services, which may have been created using 'traditional' closed source technology or open source technology, delivers greater flexibility to enterprise customers looking to drive ongoing value from their IT infrastructure." ▮

New Sensor for 6th Sense

Gives visibility into desktop activities

BY JEFF FEINMAN

Software development metric company 6th Sense Analytics has released the latest version of its namesake development project metrics tool, with a new operating system sensor for increasing visibility into developer activities on the desktop.

The data provides an accurate view of project bottlenecks, says CTO Todd Olson.

6th Sense executives said that the new sensor tracks every last bit of desktop activity for computers running Microsoft Windows, giving customers "unprecedented" visibility into the time sink of noncoding activity.

"Before this, we had a picture of simply development-level activity, but now we're capturing all nondevelopment activity" on the computer, said Todd Olson, co-founder and CTO of 6th Sense. "A lot of times, customers are concerned that products aren't getting done and people aren't getting freed up to work on the projects. They want to know where the bottleneck is. The greatest benefit we're providing is now we have enough data to get people a very accurate picture of where the bottlenecks are in their software projects."

New features in the 6th Sense Analytics update include a framework for attributing time to various categories, and an attribution engine that allows users to define their systems and create rules for attributing time to projects. System reports have also been refreshed with user-defined values and uniformity in tracking and reporting.

"Today, developers are using Web browsers and other collaborative tools that fall outside integrated development environments," Olson said. "In addition [to the new sensor], 6th Sense's attribution engine ensures that the collected data reflects a team's individual business and processes." ▮

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NEWS BRIEFS

COMPANIES

Real-time operating systems company **Express Logic** has announced that its ThreadX RTOS product has middleware support for configurable processor provider Tensilica's new Diamond Standard 106Micro 32-bit microcontroller core . . . **ClearApp**, a provider of application service management for Java EE-based composite applications, has created support for the Oracle SOA Suite, a component of Oracle Fusion Middleware. The company claims this can give customers a top-down topology of their SOA applications, allowing users to drill down directly from higher-level transactions of composite applications, into SOA components and servers . . . Performance intelligence provider **Aternity** has formed a partnership with Oracle and the Israeli government to increase support for startup companies and independent software vendors. Oracle E-Business suite users can receive "frontline performance intelligence" from the Aternity platform.

NEW PRODUCTS

Project management software provider Vertabase has launched a public alpha version of the **Vertabase Timer.** The tool is designed to simplify time management on projects and clients, and generates time reports that can be exported to XML for use in other applications. It runs on Adobe AIR and is compatible with Windows and Mac OS X as a desktop widget.

UPDATES

Software and Web-based technology provider Metafuse has updated its Project Insight Web-based project management software, geared toward the midmarket. **Project Insight 7.0** features new graphical portfolio reports, executive dashboards and project status reports, as well as upgraded timesheet and expense report entry using AJAX or Web 2.0 technology . . . Data connectivity and mainframe integration company DataDirect Technologies has released **DataDirect XML Converters 3.1**, the latest version of the Java and .NET components. DataDirect XML Converters 3.1 now has support for Health Level Seven standards, from the health-care industry organization of that name, for the exchange and management of health-care information to support patient care . . . Code search software provider Koders has released **Koders Pro Edition 1.1,** the latest version of its software that can be deployed within a firewall to securely search private code. This version of Koders Pro offers Google Mini and Microsoft Sharepoint integration, Subversion and Visual SourceSafe adapters, with an extensible analyzer that allows indexing of custom file types . . . Excel Software has shipped **QuickUML 3.0** for designing object-oriented software with an integrated core set of UML models. The new version comes with new diagram presentation features that allow attributes and properties to be defined for each class and presented on customized diagrams and new PHP code generation.

PEOPLE

Trolltech, creator of the Qt application framework, was expected to announce that **Lars Knoll** was promoted to vice president of engineering. Knoll was an original creator of WebKit, the open source browser engine. Knoll is credited for creating KHTML, an HTML layout engine, which was adopted by Apple in 2002 for the Safari Web browser . . . **Dale Fuller** was appointed to the board of directors for Krugle, a company that offers appliance searches across code repositories and development resources. Fuller is former CEO of Borland Software and recently served as interim president and CEO of McAfee . . . RIA developer Appcelerator has appointed **Ben Sabrin** vice president of strategy and business development, and will oversee partnership programs and recruitment. Sabrin was previously vice president of sales for open source company JBoss. ■

FULLER

Google Web Toolkit Struts Its Stuff in 1.5

UI libraries conform to Java 1.5 standards

BY ALEX HANDY

SAN FRANCISCO — The rise of the Google Web Toolkit could lead to the demise of the Struts Java Web framework, according to David Geary, a member of the expert group for the JavaServer Faces 2.0 specification. During a talk at the Voices that Matter Conference at the Google Web Toolkit (GWT) conference here in early December, he also implied that JSF is in no danger of becoming obsolete.

Geary claimed that GWT's biggest draw for enterprise developers is its similarity to Java's Abstract Window Toolkit, Swing and the Standard Widget Toolkit. Indeed, a show of hands from the audience showed that nearly 80 percent of those in attendance had worked with these frameworks in their environments. He highlighted the parallels by showing off the code behind Yahoo's Trip Planner site, which is built with GWT. In that site, users can drag and drop items in an ordered list in a manner similar to that seen in desktop applications.

"There's no amount of Struts code in the world that can do this," he said, citing that framework's shortcomings.

When asked what made GWT so unique, Geary described a feature of GWT that he initially thought was a major shortcoming: "GWT doesn't give you built-in database access. It won't interfere with the framework on the server. You can use it with JSF or Ruby on Rails [RoR]. We can integrate with other frameworks that have a lot of horsepower on the server, like RoR, or PHP with Drupal."

Despite his disdain for Struts, Geary discussed integrations with the framework. To illustrate the possibilities, he showed off a GWT-based mortgage calculator widget pasted on top of a Struts page.

"This is making an RPC call in the server with a table of market rates, and [it] sends back JSON [JavaScript Object Notation]. The JSON is parsed on the client. GWT provides extensive support for parsing the JSON. We've added AJAX goodness to the barren landscape of a sorry Struts application. What you might want to do is replace [the] HTML elements on top with GWT widgets. Then you need a deeper level of integration. That sounds like a fair amount of work, but there's already a Struts-GWT integration project out there," said Geary.

For version 1.5, the GWT team intends to work fully with Java 1.5, said Scott Blum, a software engineer on the GWT team. Blum's been on the GWT team since its inception at Google, and he said that the team has now grown to roughly 14 people, not counting the countless external developers who contribute code every day.

For version 1.5, the team updated all of the user interface libraries to conform to Java 1.5 standards. The ability to use methods across Java and JavaScript by embedding the method in code instead of presenting the entire library will also be included for the first time.

For GWT 1.6 and beyond, the team at Google hopes to look into further optimizations, such as adding in the ability to dynamically generate Cascading Style Sheets tailored to each browser, said Blum.

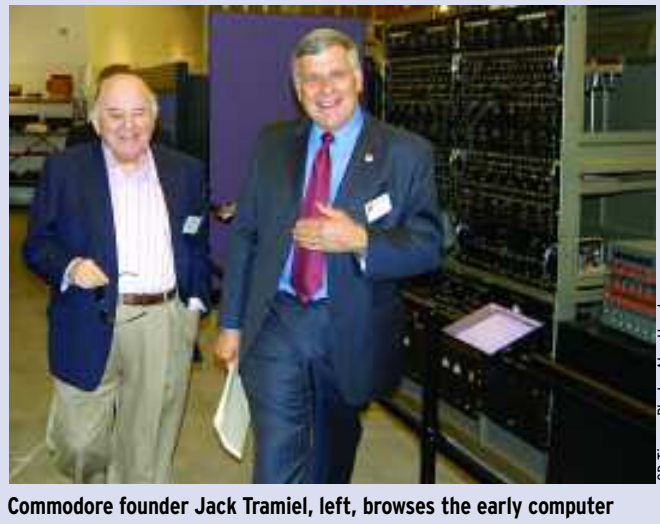
Google Web Toolkit 1.5 should arrive in a finalized form in January. Blum said that the development team hopes to get into a quarterly release schedule, but admitted that this long-term goal has yet to come to fruition. ■

Celebrating Commodore 64's 25th

BY ALEX HANDY

MOUNTAIN VIEW, CALIF. — Jack Tramiel made his first public appearance in 15 years, joining a host of his peers from the early days of personal computing to celebrate the 25th anniversary of the Commodore 64.

The C64, still the best-selling single model PC ever created, was originally released in August 1982. Steve Wozniak, William Lowe and Al Alcorn were on hand with a large crowd to honor Tramiel and his family at the Computer History Museum on Dec. 10.



SD Times Photo: Alex Handy

Commodore founder Jack Tramiel, left, browses the early computer artifacts at the museum.

The reclusive Tramiel—who is an Auschwitz survivor—founded Commodore in the 1950s as a typewriter manufacturer. In 1984 he left Commodore and took the helm of Atari. When asked why he called his company Commodore, he gave the never-heard story behind the name: "I wanted to call my company General, but there's so many Generals in the U.S.: General Electric, General Motors. Then I went to Admiral, but that was taken. So I wind up in Berlin, Germany, with my wife, and we were in a cab, and the cab made a short stop, and in front of us was an Opal Commodore." ■

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The Year the GPL Went to War

BY ALEX HANDY

For developers, the open source world of 2007 was all about updates and interesting new projects. From a new version of Eclipse to a new scheduler in Linux, developers around the world contributed their free time to make their lives and the lives of others collectively easier. But in hindsight, 2007's significance may well be that the GPL finally grew some teeth.

2007 marked the first time the GPL saw changes or revisions since the early 1990s. Specifically, the third GPL version was proposed, revised and released this year. And thus far, it has had little to no effect on most developers. Perhaps this is due to the relatively limited changes in this new license: New paragraphs forbid the implementation of digital rights management using GPL'ed software, and other sections help to sort out some of the mess software patents can cause.

The GPL's new clothes seemed to give the Software Freedom Law Center (SFLC) a new passion for the older forms of the license. In the fall, the nonprofit law firm helped two open source developers begin a major legal campaign to defend their hitherto-obscure Unix toolkit known as the BusyBox project. Those tools seem to get around in the embedded devices world, as BusyBox lawsuits have now been filed against four companies, including Verizon. This marks the first time the GPL has been directly asserted in an American court system, though no gavels had actually fallen as of this writing: SFLC obtained a settlement in the first of the four cases.

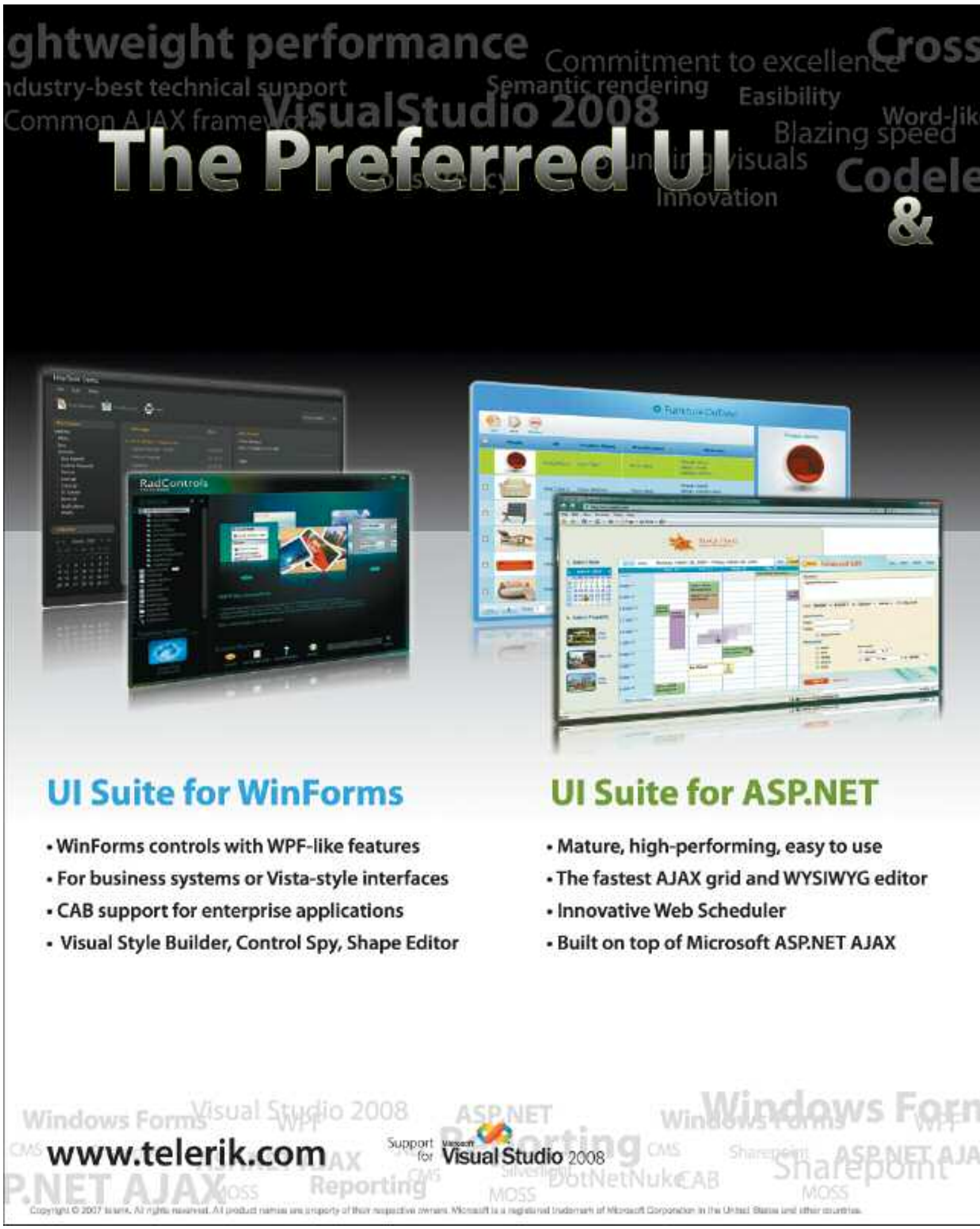
REDISTRIBUTION AT ISSUE

While the GPL has been in court in the past, this was the first time in its almost-20-year history that the redistribution clause was at issue, instead of some legal vagary. If the trend continues, 2008 could see dozens of similar lawsuits, especially now that the SFLC has a win under its belt.

But for developers, open source is about code, not lawyers. And the code released into the wild during 2007 was used to do everything from chart business rules in massive SOA installations to sorting out the differences between Microsoft Internet Explorer and Mozilla Firefox Web browsers. Perhaps these latter projects, such as Prototype.js and the Dojo toolkit, were the most important open source projects for developers. With so much hype still surrounding AJAX, these kits help to make Web development easier than it's been in years.

Java also deserves a tip of the hat in the open source world, as that language began its journey out of the heart of darkness in May. With Eclipse 3.3 offering the largest code update since its creation, the Java world is expanding exponentially into the hub of open source development its users have been hoping for.

And with companies such as BEA, IBM, Oracle and Sun contributing huge chunks of code to the Java community, and to the larger development world, we may all someday benefit from the time and cost savings open source claims to offer. ■



Security and SOA Were the Watchwords for 2007

BY DAVID WORTHINGTON

The security segment of the test/QA market underwent a significant consolidation in 2007 with leading vendors being purchased by large software makers. Another trend was the increased emphasis by vendors on SOA quality testing tools.

When the year began, Mercury Interactive had vanished from the map; Hewlett-Packard had completed its acquisition of it in the closing months of 2006, erasing the Mercury brand altogether.

HP added Web application security to its portfolio by acquiring SPI Dynamics; the transaction was completed Aug 1. HP began offering SPI products, including DevInspect, QAInspect and WebInspect, under its own name shortly thereafter.

IBM was a step ahead with its June acquisition of Watchfire, announced two weeks before HP's fanfare. The acquisition, which was completed on July 20, added Web application and compliance testing tools to Big Blue's Rational development portfolio, while Watchfire AppScan became IBM Rational AppScan.

Continuing the consolidation trend, Fortify Software gained the capacity to integrate its technologies with IBM's software development tools by buying Secure Software and its tools to secure software during the development life cycle.

TESTING IN THE 'SOA' ERA

The uptake in service-oriented architecture has driven demand for testing tools that provide comprehensive interoperability, functional, performance and vulnerability test functions. Testing a SOA application presents challenges that stem from the integration of services and the dynamic nature of SOA applications.

Companies including Compuware, iTKO, Mindreef, Parasoft and Solstice Software released new SOA testing tools in 2007. Testing tools from these vendors advanced in 2007, offering broader automation and integration capabilities.

Also of note, 2007 was the year that virtualization began to move into the application lifecycle management stack, starting the era that Voke analyst Theresa Lanowitz dubbed "ALM 2.0." As an example, iTKO introduced LISA Virtual Service Environment in November.

VSE permits development teams to work in parallel by virtualizing the behavior of services and underlying systems, and simulating load testing. iTKO claims that virtualized services permit QA teams to lower the required number of test beds, while reducing licensing costs and contention for hardware.

Lanowitz believes that a virtualized services environment will be the next big wave to follow in the development life cycle—a wave that perhaps began as a ripple in 2007. ▮

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_INFRASTRUCTURE LOG

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PDF 1.7 Inches Closer to ISO Standardization

BY DAVID WORTHINGTON

Adobe Systems' PDF format is on the march to global acceptance. On Dec. 4, the specification cleared a major milestone when an International Standards Organization (ISO) ballot passed overwhelmingly in its favor.

The ballot for Portable Document Format version 1.7 to become an ISO standard was approved by a vote of 13-1, with Russia abstaining. ISO 32000 is the designated working group for PDF.

Australia, Bulgaria, China, Japan, Poland, South Africa, Spain, Sweden and Ukraine voted positively with no comments; Germany, Switzerland, the United Kingdom and the United States likewise approved the ballot, but had comments. Only France voted against PDF's acceptance, with comments.

There were 205 total comments; the American committee submitted the majority of them. Jim King, a principal scientist with the company, wrote in Adobe's "Inside PDF" blog of the odd circumstance that the sponsoring country—the United States—is the one with the most comments. King acknowledged that the U.S. committee has many knowledgeable people, including some from Adobe, who found mistakes in the specification.

"To me, this reflects the honesty with which this group has approached this whole effort. We could have held back to reduce the number, but that is not the way this whole effort has been conducted and we are not about to start with any trickery," he noted.

King has been nominated by the American committee to be the technical editor for the next meeting of the ISO working group in January, and expects that he will be prepared with responses to all 205 comments.

In an e-mail to SD Times, King stated that the working group might be able to declare that the specification is ready to publish, if it can address all of the comments to the satisfaction of all participating parties. Otherwise, the group will initiate a two-month Final Draft International Standard vote for the revised document to be published as ISO 32000.

Adobe released PDF 1.7 to AIIM (Association for Information and Image Management) in February, which in turn submitted a draft to ISO for consideration. Two subsets of the PDF format have already been approved by ISO as international standards: PDF for Archive (PDF/A), and PDF for Exchange (PDF/X).

Meanwhile, PDF for Engineering (PDF/E) and PDF for Universal Access (PDF/UA) are on ISO's docket as proposed standards. ■

BEA Offers 'Genesis' Glimpse

◂ continued from page 1

able in the first quarter of 2008.

"Multiple requirements arise as service use increases. Performance must continue to meet expectations, QoS must be assured and appropriate service level-agreements established. Also, organizations must ensure that they effectively manage a rapidly growing portfolio of diverse assets (e.g., services, policies, business processes) and publicize the availability of these assets," said Jess Thompson, research vice president with Gartner Research, in a prepared statement.

THE GENESIS OF GENESIS

BEA previewed its Service Component Architecture (SCA), testing a preview release of its SCA runtime for WebLogic Server 10.3. SCA is an initiative introduced by a consortium of Java EE technology vendors in 2006 to define specifications that C++ and Java applications should follow to conform to SOA principles.

BEA WorkShop will offer tooling support to create SCA components in the second half of 2008, and AquaLogic Enterprise Repository also will be updated at that time.

Likewise, the company will introduce its enterprise-grade SaaS platform in the second half of 2008—the first Genesis deliverable. Among its features are a container for SaaS applications that is deployable in virtualized environments, entitlements for multitenant security, metering capabilities to support end-user billing, presentation services for user access and interaction, and support for BEA's WorkSpace 360 collaborative ALM environment.

Jason Bloomberg, an analyst with ZapThink, commented in an e-mail to SD Times that the marketing for Genesis was "right on target," adding, "The combination of SOA, BPM and Web 2.0 to create Service-Oriented Business Applications is the key story that all vendors should be telling."

However, Bloomberg questioned BEA's approach, depicting it as a "platform play," writing: "After all, the platform is what they have to sell, so any Dynamic Business Applications story coming out of BEA will necessarily have a J2EE platform at its core." ■

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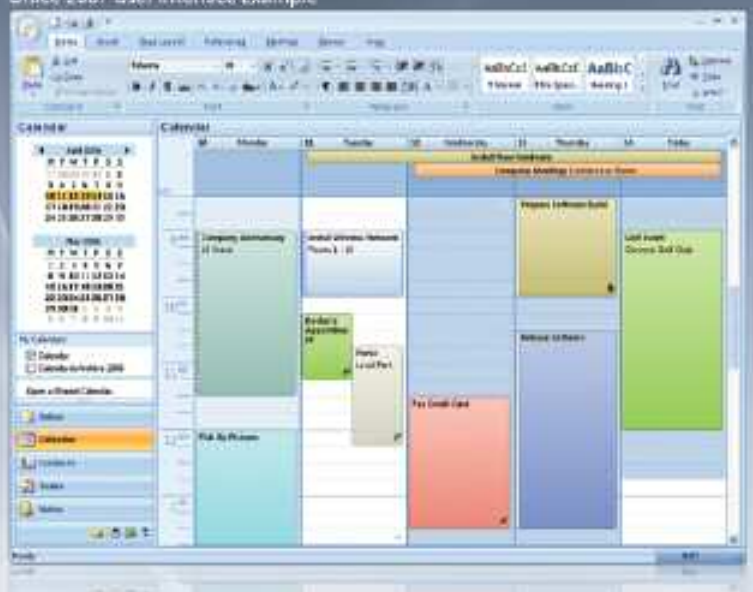
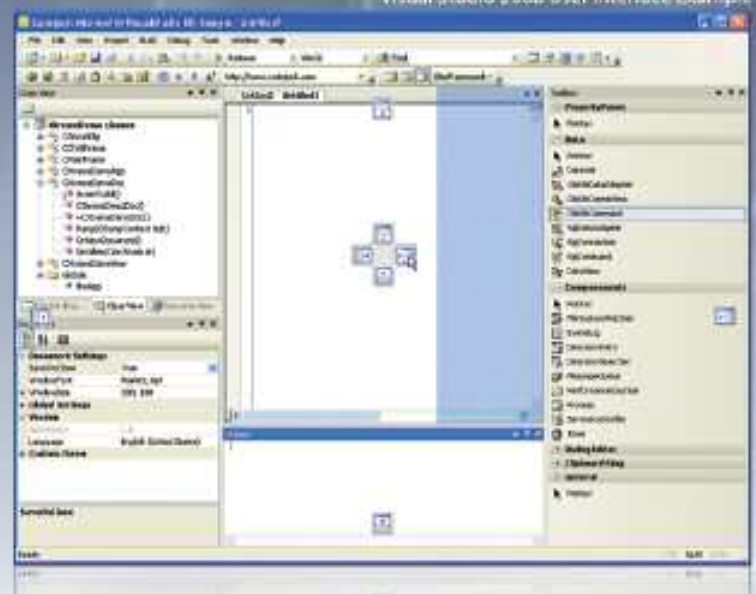


Visual Studio 2008 User Interface Example



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.NET Enters the Era Of Parallel Computing

BY DAVID WORTHINGTON

The shift to parallel computing is under way, and Microsoft is taking steps to ensure that .NET developers are not left behind scratching their heads in a sequential world.

Microsoft in late November released a Community Technology Preview (CTP) of the Parallel Extensions to .NET Framework, also known as ParallelFX. The CTP contains APIs, samples and supporting documentation intended to simplify concurrent programming on the .NET 3.5 Framework.

ParallelFX provides a managed programming model for data parallelism, task parallelism and coordination on parallel hardware unified by a common work scheduler.

In a Nov. 29 blog posting, Microsoft corporate vice president S. "Soma" Somasegar wrote that two of the ParallelFX APIs were included for imperative data and task parallelism, and that a data parallel implementation of LINQ-to-Objects permits LINQ queries to be run on multiple processors.

James Staten, an analyst with Forrester Research, said that the industry has reached a point where enterprise developers that have not previously had to address parallelism in any way now have to pay attention to it in their code.

Staten feels that the tools were a long time coming. He explained that while high-performance computing and Java developers have already had adequate tooling, "Microsoft-class" developers have been lacking a "good set of tools."

"There has been nothing for the general Visual Studio developer," he explained. "It is good to see [Microsoft] package this stuff together. [ParallelFX] is not yet good enough for widespread adoption, but is a good starter kit for people that need to get on top of parallelism now."

Staten acknowledged that while solutions exist to automatically "parallelize" portions of non-parallel code, some functions must be addressed with code changes.

"ParallelFX is a tool to fall back on and take a deeper look at the actual code, when the quick fix does not work," he explained. ■

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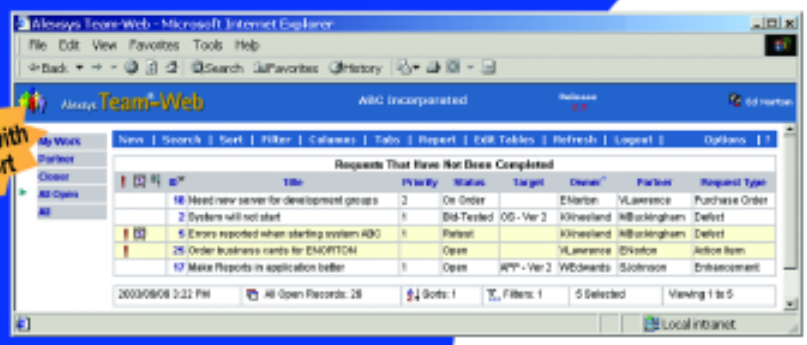

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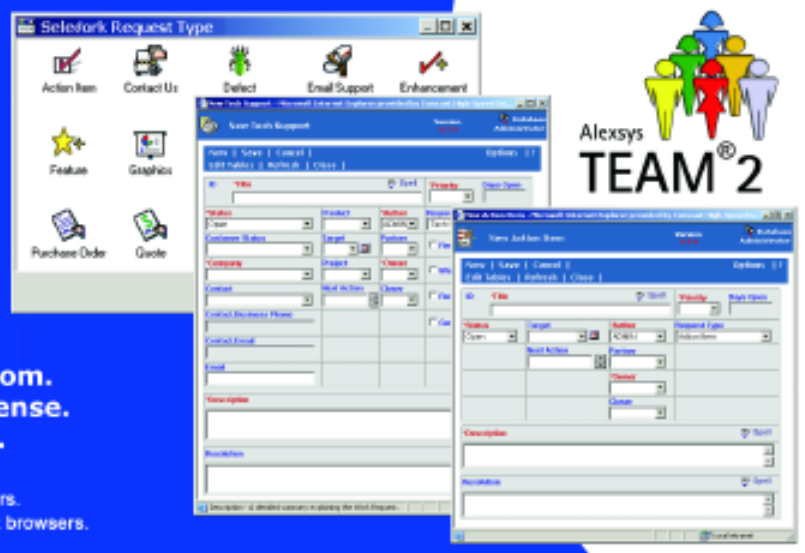

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Modernizing Legacy Apps Requires Budget, Management

Top-level management must be part of the legacy update process

BY ALEX HANDY

LAS VEGAS — Legacy applications don't just drift off into the sunset. Instead, they linger like teenagers around a convenience store. Gartner research vice president Dale Vecchio discussed strategies for modernizing old business applications at the Gartner Application Architecture, Development and Integration Summit here in early December. Chief among his recommendations was to involve senior management in the process and to allocate a budget specifically for the task.

The stamp of approval from on high gives these efforts the authority and backing they require to succeed, Vecchio noted, adding that the companies he's consulted for are far more successful at updating old applications when they have a budget specifically set aside for the task.

Ideally, he said, that budget can be gathered up from the cost savings initially realized through application portfolio management. But protecting that reinvestment scheme also requires the backing of the highest levels.

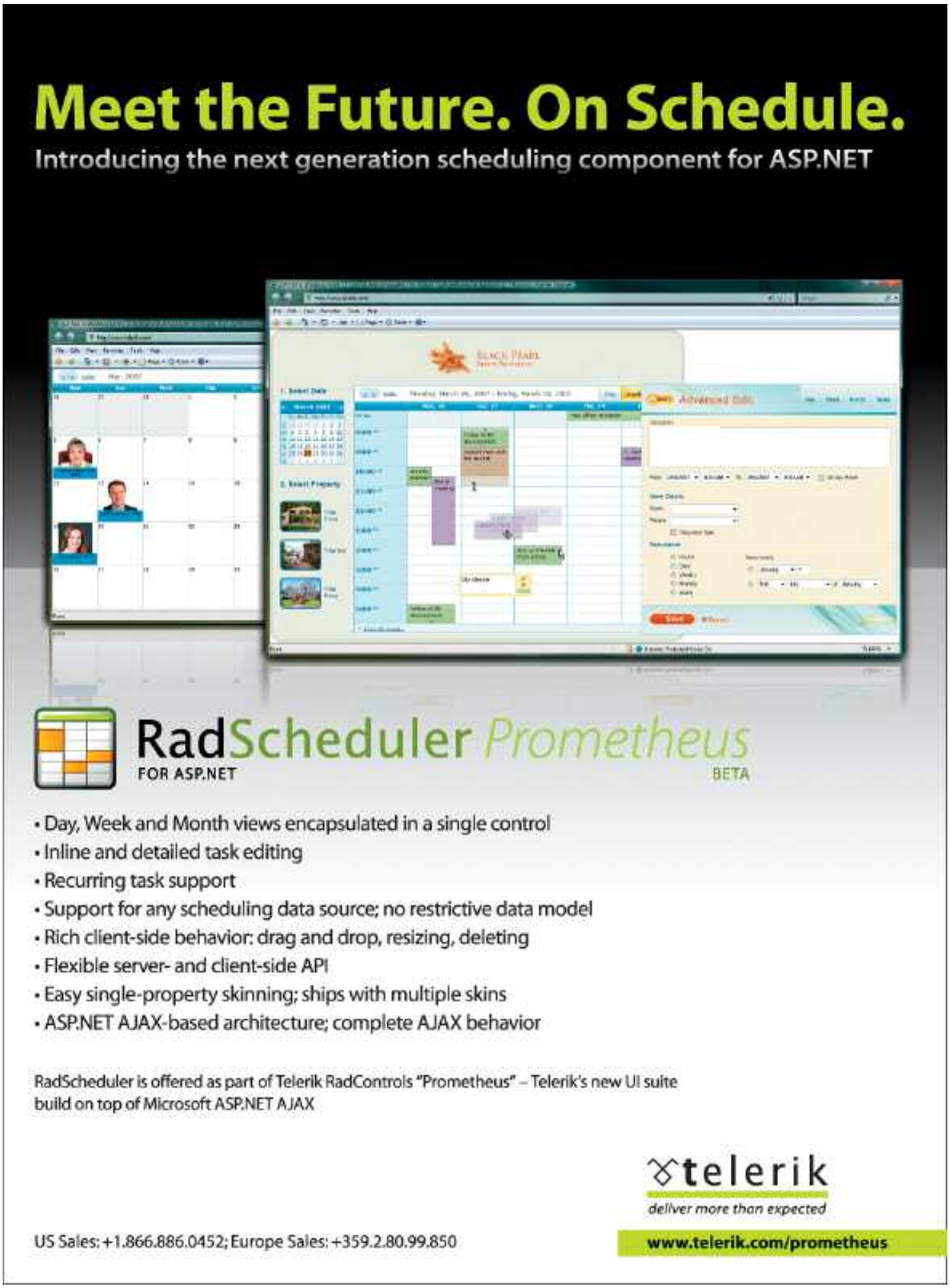
Applying portfolio management disciplines means eliminating useless applications, and possibly moving old software into newer, cheaper hardware. Vecchio recommended that legacy modernization begin with this process of identifying useless software and code within a company's application portfolio.

Once the herd is culled, the next step is to identify the applications that will soon be without shepherds in the organization. Visiting human resources and getting a list of IT job titles and the corresponding time to retirement for the person in each position can start this process, Vecchio noted.

As a result, he said, development managers can quickly identify where their skill sets face a staffing crisis. Vecchio cited one company he'd worked with that found half of its mainframe developers were eligible to retire before the end of the year. Such news resulted in a time frame for the project to be completed.

Without those old hands on the staff, modifications could become a horror show, Vecchio said. "These are not legacy systems; they're leprosy systems. You're afraid if you touch them, you'll lose a body part," he said, describing the underlying code of some veteran applications.

In the end, Vecchio said that modernizing legacy applications would never be easy. But that doesn't mean projects should be put off until later. "Waiting is in no way, shape or form going to make this easier," he said. ▮



What Do Your Metrics Say to You?

Borland looks into issues with data around app development projects

BY JEFF FEINMAN

Companies are spending a great deal of energy and money on gathering useless metrics and data around application development projects, according to Borland Software.

Borland, with the help of Forrester Research, interviewed 20 application development organizations selected by Forrester and found organizations often rely on metrics in software projects with little or no value to the development process. The results were released last month. The most commonly tracked metrics, said the study, consist of "post-mortem" project management metrics: schedule, costs and defects.

"Application development organizations all too often waste their time and money chasing after metrics that don't help them improve their operations," said Carey Schwaber, a senior analyst with Forrester Research. "Many settle for what they call 'industry standard' metrics, but they are really just the metrics that everyone else happens to have settled for. Why does everyone gravitate toward these metrics, which include on-time, on-budget and on-scope? They're easy to measure, even if they're not particularly meaningful until the project is over."

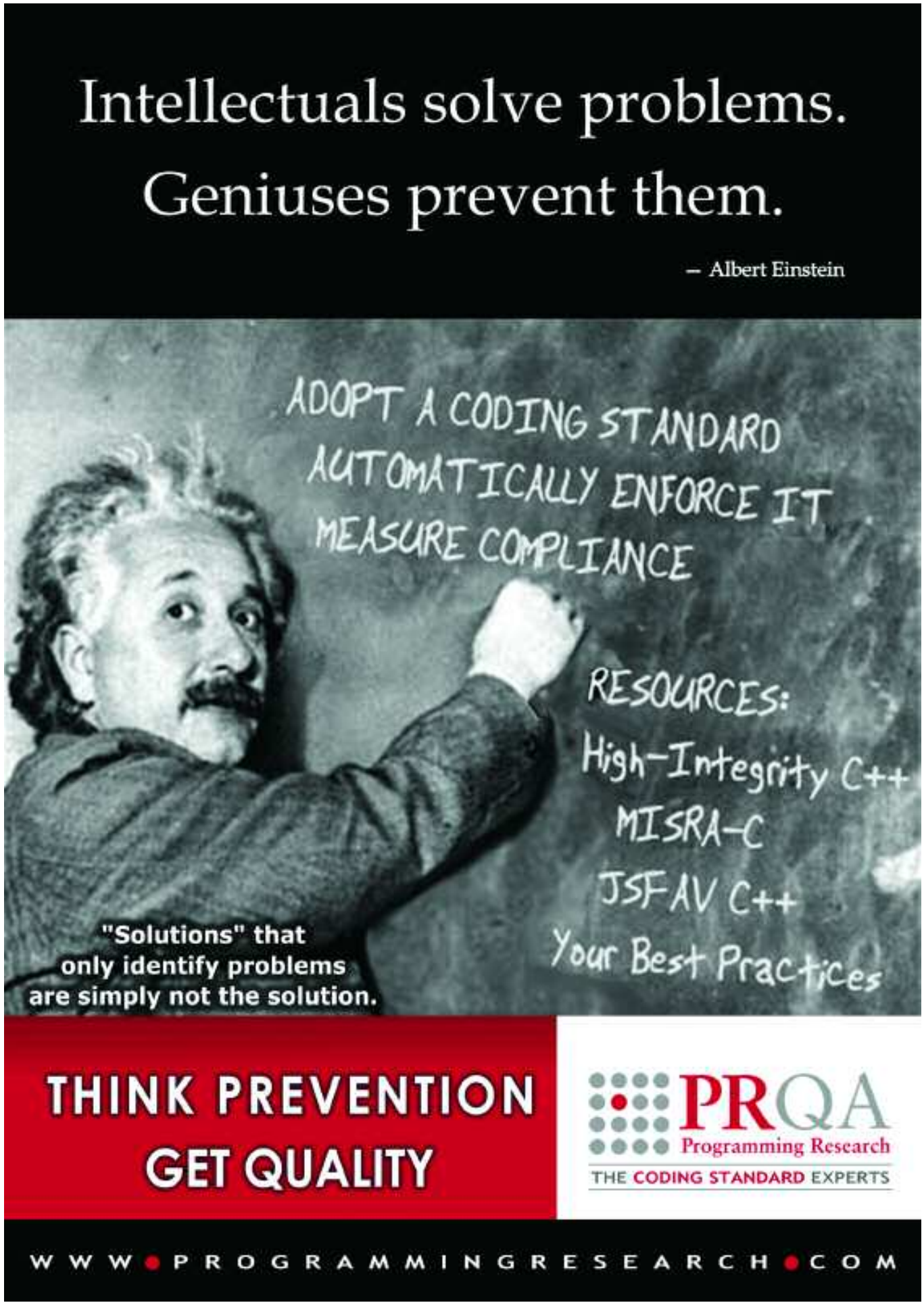
But these metrics don't offer any insight into making sure the right projects and actions are being carried out, according to the report. Borland officials said there should be more focus on metrics about business value, and data around the app development project itself.

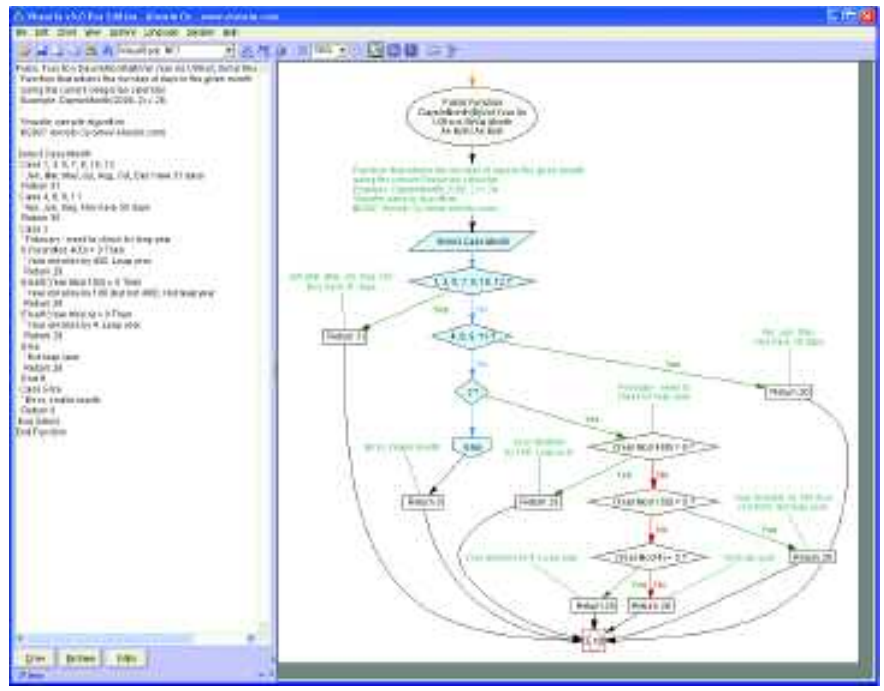
"There are lots and lots of easy metrics to collect," argued Marc Brown, vice president of product marketing at Borland. "There are many metrics collected in the requirements management phase, in the development phase," but these often fail to measure the value of a project, he claimed. "That's why we consider them very superficial."

WHERE THE GOOD STUFF IS

Instead, what organizations should be collecting, Brown noted, is data with business value, customer value and tactical value. Tactical metrics address the readiness of a project, if the product has been tested, and what vulnerabilities exist in the product. Business value, said Brown, is something that not many organizations are doing today, because it is a "second order measurement" and entails the gathering of different data points from the engineering, marketing and sales departments. Customer value is determined by customer usability surveys and customer adoption.

Brown noted the study found that organizations are looking for metrics in six key areas: the ability to improve the predictability for software delivery, readiness of the project, business value, customer satisfaction, using inner resources and processes efficiently, and more vertically focused metrics around the software life cycle. ■





Visustin 5.0 converts source code to a flow chart with the press of a button.

Aivosto Goes With the Flow

BY JEFF FEINMAN

Software quality assurance and optimization tool provider Aivosto has released the latest version of its program for converting source code into flow charts.

Visustin 5.0, released in early December, gives users two ways to make flow charts: automatically, or manually through the new Visustin Editor. Source code is reverse-engineered into flow charts, and the tool can automatically update flow-chart documents. The Visustin Editor, according to Aivosto officials, allows users to edit these automatically created charts, insert comments, adjust links and improve the layout of flow charts.

Another new feature in this version is the ability to predefine bulk flow-charting jobs, which allows users to select which source files should be flow-charted and queue them for execution. Visustin runs the job and does the charts without user intervention, and as source files change, the job can be run to keep the charts updated, according to company officials.

Visustin also has added the capability to convert XSLT and ColdFusion code into flow charts, which bumps the number of programming languages that can be converted up to 31. Other languages from which Visustin can make flow charts include COBOL, Fortran, Java, Perl, PHP and Python.

"When a program lacks technical documentation, or the documents are out of date, Visustin makes it [easy] to create flow charts as the documentation," said Tuomas Salste, president and founder of Helsinki, Finland-based Aivosto. "Flow charts help understand existing source code, especially complex spaghetti code with lots of decision loops and jumps. With Visustin, developers save their documentation and learning efforts and get a better understanding of the code at hand." ▮

Rogue Wave Hangs 10

SourcePro C++ updated with Apache standard library

BY P.J. CONNOLLY

It may not be a perfect 10, but any product that makes it to a 10th release has to have more than just "something" going for it.

Rogue Wave Software seems to have learned that, having rolled out Rogue Wave SourcePro C++ Edition 10.0 in December. The new release includes full integration of the Apache Standard C++ Library, currently under incubation as the "stdcxx" project, which in turn relies in part on code supplied by Rogue Wave.

SourcePro C++ Edition 10.0 also includes the Essential Tools Module, which allows users to implement a new RWZone base class that itself makes use of the Olson Time Zone Database. This data source provides portable and consistent time zone information that is vital for financial transactions and any other activity that requires accurate time data.

Source Pro Edition 10.0 adds the ability to run on a variety of current-generation operating systems, including SUSE Linux 10 and Windows Vista. It can also work with Sun Microsystems' Studio 11 and 12 on appropriate versions of Solaris, and other development tools from IBM and Intel. ▮

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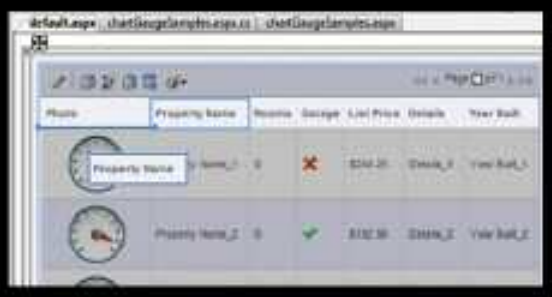
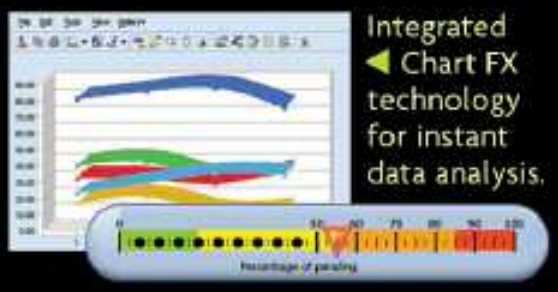


▲ Drag & drop grid elements within the Visual Studio 2005 design surface.



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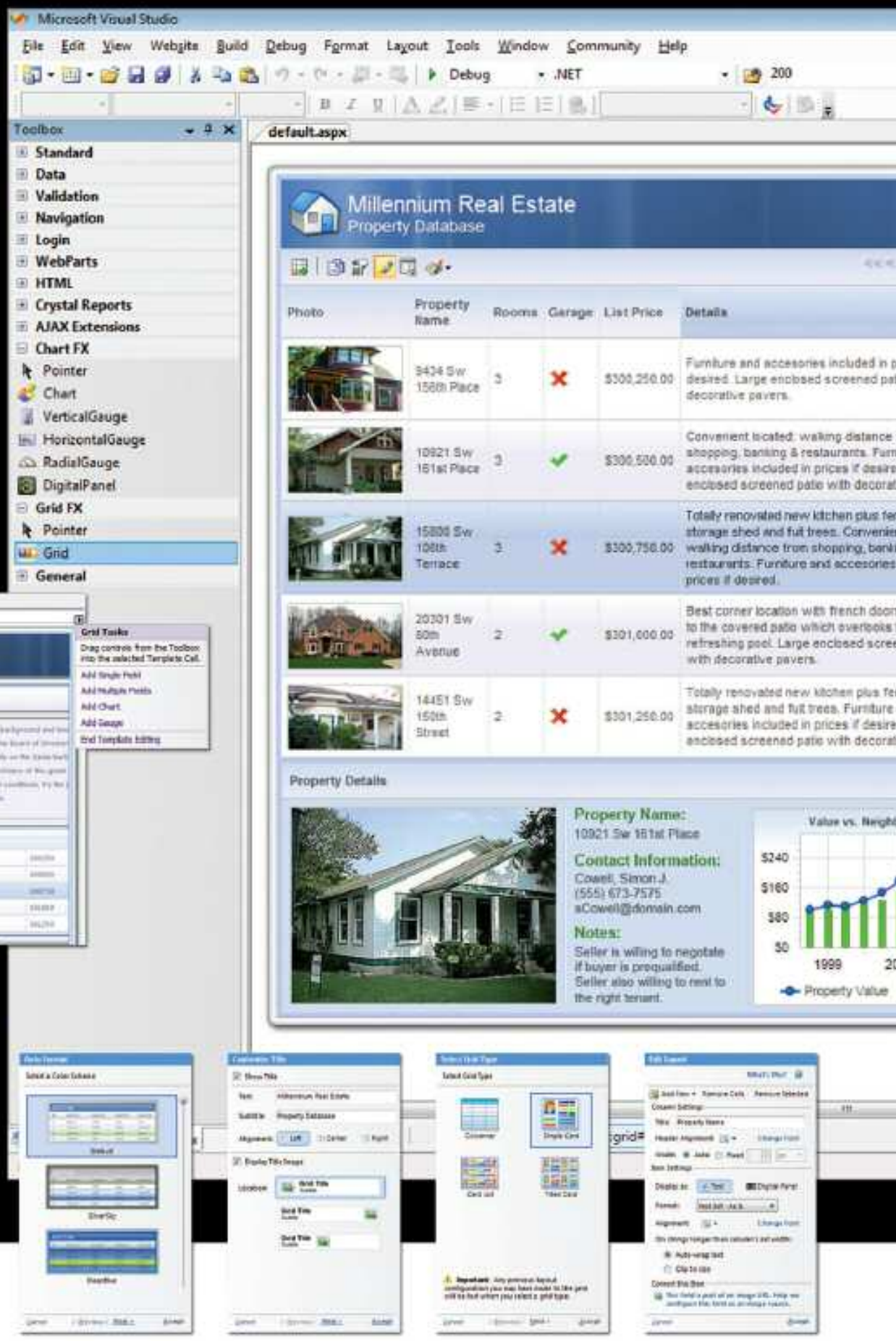

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Ruby on Rails 2.0 Pulls Into the Station

New version expands REST support, resource handling; adds request profiler

BY ALEX HANDY

Ruby on Rails 2.0 chugged into the depot in early December. The new version of this open source Web framework brings with it numerous improvements to the granular syntax of RoR development, and to the way that basic resources are handled.

For developers coding things such as change management systems or forums, a new namespace for routing resources will allow for easier restriction of administrative screens and limited access areas. The push for simpler and more plentiful resource handling also led to the decision to make all resource-based controllers plural by default, allowing users to map multiple contexts and still refer to the same controller.

Of course, improved REST support implies that the framework has moved closer to the HTTP layer itself, and indeed it has. A new module in RoR 2.0 handles authentication and HTTP handshaking; giving the framework a new way to verify APIs via SSL. Also added in version 2.0 is support for HTTP-only cookies, a standard that is not yet supported in all browsers.

Rescuing common exceptions in ROR has previously required an elaborate dance with the command. In version 2.0, a new, more generic "rescue" command has been added to allow developers to declaratively point exceptions to specific actions, such as passing an unauthorized user off to a null page.

Debugging is still something of an Achilles' heel for Ruby developers, but RoR 2.0 attempts to help with this problem by including a new request profiler. The profiler outputs information on bottlenecks in automatically generated HTML reports.

RoR 2.0 is available for free online at www.rubyonrails.org. The framework may also see a small update to accommodate version 2.0 of the Ruby language, which was expected to arrive in time for Christmas. ■

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Integration Software Trading Post

A new Web site has opened to nurture the Jitterbit community

BY DAVID WORTHINGTON

Jump-starting a community isn't the easiest thing in the world to do, but when one recognizes the need for a boost, it helps to follow the example of a success story.

Taking a page out of the Salesforce.com playbook, Jitterbit last month opened the doors to Trading Post, an integration-specific online marketplace.

The Jitterbit Trading Post (tradingpost.jitterbit.com) makes it possible for Jitterbit community members to share integrations and plug-ins, and to sell full integration solutions. CEO Sharam Sasson said that the company would not charge fees for use of the site.

The marketplace was stocked with solutions called "Jitterpaks" during the course of a private beta. Customers, providers and users, including the state of Iowa, Continental Airlines and NASA, have published their solutions. Code is licensed under the Mozilla Public License.

Jitterbit offers a like-named open source application integration solution. It differs from EAI (enterprise application integration) platforms and hand-coded solutions because there is no coding involved on the part of the end user.

Instead, business analysts use the Java-based Jitterbit client to point to the location of applications and Web services, exposing components that they can integrate through a drag-and-drop interface. A wizard creates a metadata repository that ties together the components, and the Jitterbit runtime executes the integrations for testing and deployment.

Ilan Sehayek, CTO of Jitterbit, explained that the Jitterpaks hosted on Trading Post were not like source code in the traditional view of open source because they are downloaded and opened in the client's graphical environment.

The initial release of Jitterbit shipped last year. The most recent update, Jitterbit 1.3, launched on Nov. 30. It adds support for large file uploads, LDAP and XML streaming. Those features make it possible for Jitterbit to interoperate with content management systems, integrate with LDAP servers, and process higher volumes of data faster when accessing applications via Web services.

"We continue to expand Jitterbit's functionality and add productivity gains with the help of our community and our enterprise customers," said Sehayek, in a prepared statement. "The new features in Jitterbit 1.3 will allow companies to quickly and easily integrate common enterprise applications and systems such as Salesforce.com and Active Directory." ▮

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JetBrains TeamCity 3.0 Provides Visual Build Metrics

BY ALEX HANDY

Sometimes, a couple of pictures can say more than a written report.

JetBrains last month released TeamCity version 3.0, adding in a host of new charting options to help managers get a visual idea of their team's build metrics. TeamCity is a continuous integration and build management suite that can link into multiple IDEs and source control systems, be they Java or .NET.

New to this version is the ability to output charts using the various build metrics available. Those metrics can measure such things as commits, unit test coverage and the successes and failures of nightly QA batteries.

Checked-in code can also be scraped to find duplications and code similarities, a feature that is newly applied to .NET in version 3.0. .NET users can also take advantage of the newly added support for pretested commits in IDEs from Visual Studio to Subversion.

Version 3.0 is available in two flavors: the free professional edition; and the commercial enterprise edition, which includes per-project access privilege management. ▮

Adobe Blazes Into Open Source With Data Services

BY DAVID RUBINSTEIN

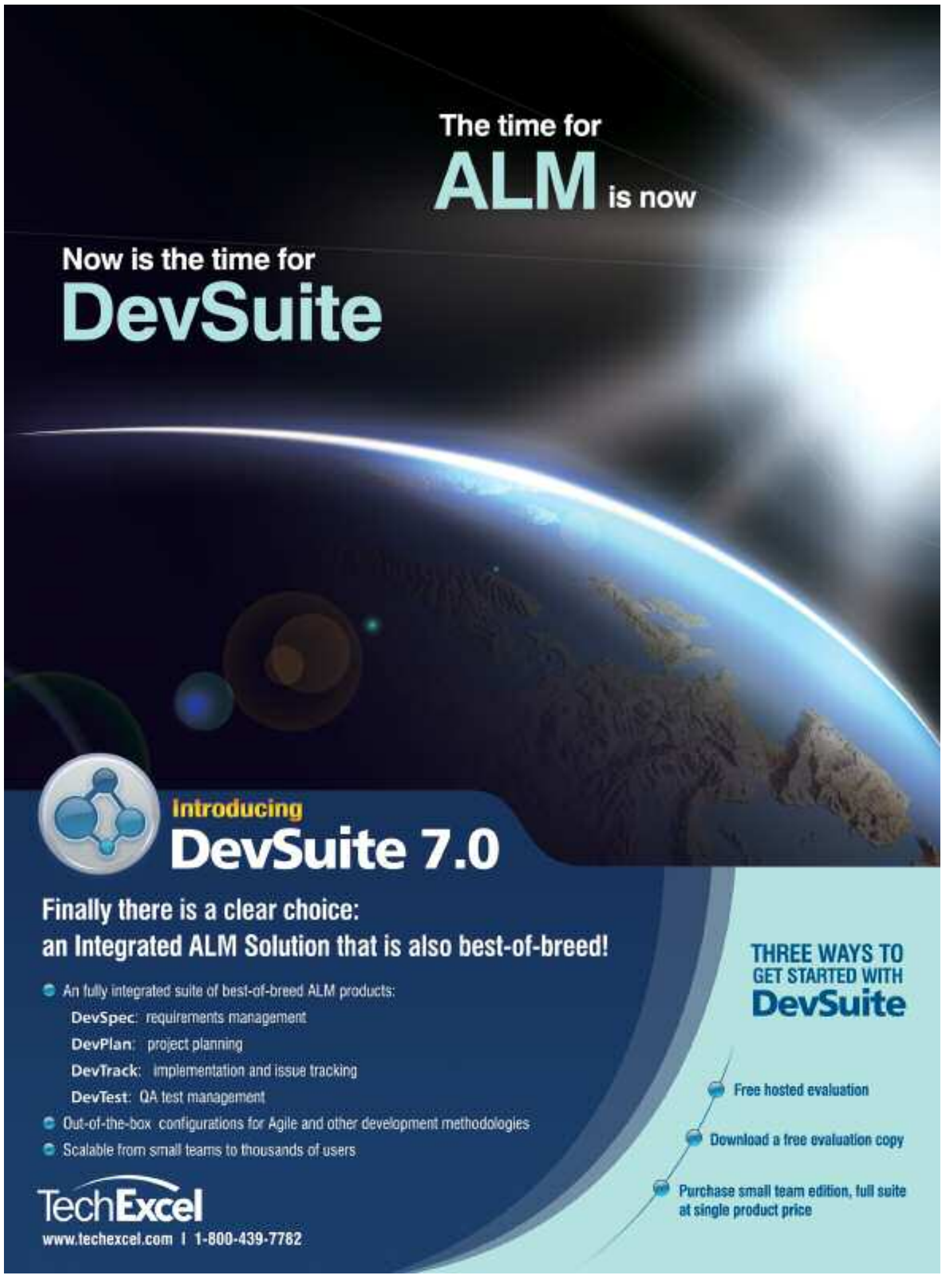
Adobe Systems wants to end 2007 in a blaze of glory, with the impending release of the source code for the remote invocation and publish/subscribe technology found in its LiveCycle Data Services software. Blaze DS is the name of the open source software and the Web-based community Adobe is building around the project.

The company plans to follow the open source business model of making the software free but also offering a subscription edition—the LiveCycle Data Services Community Edition—that provides Adobe support and regular software updates and patches, according to Tom Barclay, Adobe's senior product marketing manager.

The code, used for advanced data integration capabilities, handles the marshaling of data by using Adobe's proprietary Action Message Format, the binary data protocol used in Flash that Barclay said the company would also make available. He added that Blaze will also accommodate HTTP streaming, a standards-based Web protocol that creates persistence for the ability to push data to users.

The code is being made available under the LGPL license, according to the company's Dec. 13 announcement. Barclay said that, at first, only Adobe engineers will be able to add to the codebase, but that outside committers will be added in time.

Also released on Dec. 13 were beta 3 versions of the Adobe AIR runtime, which now includes the latest Flash player, multicore support and the H.264 video codec; and Flex 3.0, the company's environment for creating and deploying rich Internet applications. ▮



Agile Principles Are Changing Everything

◄ continued from page 1

duced, from tools and processes to the roles people play in agile organizations.

Three key conclusions emerged from the interviews. First, going agile is more difficult than many teams anticipate, largely because it turns the roles of project manager, business analyst, programmer and tester on their head. Second, no two teams apply agile in the same way. That raises questions about what's agile and what's not, and more important, whether a process can be improved by adding one or two agile practices. Third, even though "agile" means different things to different teams, it's safe to say that agile today is a far less dogmatic development approach than it was in 2001, when the Manifesto for Agile Software Development put Extreme Programming (XP), Scrum and other methodologies on the map.

Written by a group of believers in the ways of agile, the manifesto sums up principles that guide software development, including "individuals and interactions over processes and tools" and "responding to change over following a plan."

PLEASE BEND THE RULES

One lesson learned from the early agile days is that rigid adherence to a methodology may not work in the real world, said Eclipse Foundation director of the committer community Bjorn Freeman-Benson.

"XP is a strict form of agile, and today no one does all the practices," he said, recalling an XP project he worked on as a consultant earlier in his career. The customer—in XP, that's the intended user of the software—was unwilling to take on the time-consuming role XP prescribes. So, rather than bend XP's rules, the development team canceled the project, recalled Freeman-Benson.

A better approach is adapting the methodology to suit the parties involved. A project manager could have assumed the customer role, extracting information from key stakeholders, he said. "Insisting that the customer do acceptance testing [and other things that XP mandates] was too large a leap to make."

Early projects like that gave agile a bad name, said Tom Stiehm, managing architect for the consultancy Command Information. Today agile practitioners are more willing to bend the rules. But many are afraid to use the word "agile," he said. "As a result, there is some stealth adoption of agile going on."

GOING 'WAGILE'

One way to define agile development is by what it's not. Some teams turn to agile practices to dig their way out of failing projects, said Forrester analyst Peter Sterpe. "They do two-week iterations, engage in frequent, intentional communication and do frequent builds."

But that's not agile development, he said. "They are simply getting a little bit iterative to put their projects back on track." Often, the line isn't so easy to draw. Many of the experts interviewed said it's not uncommon for development managers to add one or two agile practices, such as daily builds and early testing, to their processes. Is that agile?

continued on page 31 ►

THE ECLIPSE WAY

Here's how Bjorn Freeman-Benson, director of the committer community for the Eclipse Foundation, described the agile approach that guides the development of the open source framework.

Set regular milestones and stick to the schedule. Eclipse projects deliver new code every six weeks. Delivery dates take priority over new features.

Focus on keeping the goodwill of your customer base. The key to succeeding at this is being reliable and predictable. "No one wants to deal with random people; they want to deal with predictable people."

Break off larger projects into branches. Tasks such as code refactoring may take more than six weeks. Manage them as separate efforts, so the schedule doesn't slip.

Always keep the customer in mind when working. Code deliverables are driven by direct need, not hypothetical situations.

Bjorn Freeman-Benson

Work in a directed fashion. The team focuses on what was accomplished during the last milestone and what is planned for the next.

Let leaders lead. Scrum emphasized that all team members are equal. But in the real world, teams aren't composed solely of senior developers. "There are people who are leaders, experience-wise and personality-wise." That said, don't be a dictator. Persuade the team through discussion.

Bring in new blood. Every two years, leaders are cycled out, and new ones rise up through the ranks.

Test as you go. The rule is that code isn't complete until the test is written. "I write the test before the code. But I'm not so dogmatic that I make everyone do it that way."

—Jennifer deJong

Agile Thinking Increases Its Influence

BY JENNIFER DEJONG

Agile practices have influenced how non-agile teams carry out software development tasks. Here's a look at how agile thinking has influenced each step:

Write software in short stints, followed by customer feedback. This is the central concept of agile development. The team focuses on delivering a narrowly defined feature of the software, in a predefined time period, often two weeks. Virtually all development teams have been heavily influenced by this idea, said Brian Carter, a vice president for the consultancy Sapient. "Even clients that aren't aware of agile are asking for some demonstration of progress on a short-term basis."

That's a far cry from earlier days, when developers routinely got away with saying, "I'll show the clients [what I'm working on] when I decide to show them," said Greg Reiser, a vice president for the consultancy ThoughtWorks. Short iterations are intended to surface problems early in the project, allowing developers to receive and respond to customer feedback. "If you aren't closely working with the client, you don't know if you are doing the right thing," said Wendy Friedlander, a software developer for the cable network Oxygen Media. Of course, no team makes an overnight leap from no communication for nine months, to two-week iterations, followed by detailed feedback. But there are clear signs developers everywhere have been influenced by the iterative approach, said Michael Vax, CEO for Luxoft Canada, a consultancy. "We see a lot of people move from nine-month release cycles to three months."

'If you aren't closely working with the client, you don't know if you are doing the right thing.'

—Wendy Friedlander, software developer, Oxygen Media

Define application requirements incrementally. Agile development recognizes that not every requirement can be known at the project's outset, said Bob Schatz, head of consultancy Agile Infusion. "It focuses on capturing the highest-priority features of an application first, instead of gathering all of them up front." This is a significant change in thinking for developers, who have traditionally viewed changing or new requirements as a disruption to the process. Because the transition to the gather-requirements-as-you-go approach is difficult, teams typically take small steps first, said Tom Stiehm, managing architect for consultancy Command Information. They develop a big vision up front, and write a lot of requirements related to that vision. But they don't flesh out the details of the requirements until they are about to fulfill them. "That isn't agile development, but it is agile thinking."

Use test-driven development. Traditional testing approaches focus on finding defects after the fact, once code has been written. The agile practice known as test-driven development turns that on its head, mandating that developers design tests before they write the actual code. Non-agile teams aren't likely to do that. But they have nonetheless been heavily influenced by the practice. It's commonplace to conduct unit tests as code is being written, said Stiehm. One indicator that unit testing has gained widespread acceptance? "When we hire a Java programmer today, we expect experience in JUnit," he said, referring to a popular open source tool for unit testing. "That wasn't the case a few years ago."

Perform continuous integration. Not everyone adopts this agile practice, in which a new build is launched each time a developer checks in code changes. But daily builds have become commonplace, even among teams that aren't doing agile, said Ross Pettit, client principal for ThoughtWorks. "Builds are no longer deferred."

The daily build has become a mainstream practice not because it is agile, but because it's common sense, added Stiehm. "It's important to know on a daily basis whether your code is functional." ■

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HP and IBM Shake Up Security Market

BY JEFF FEINMAN

Much like the movie industry, two summer blockbusters dominated the year's software security market. After IBM announced its intent to acquire Watchfire in June, Hewlett-Packard waited barely a month to put together its own box office hit by purchasing SPI Dynamics. The two security plays demonstrate the commitment of the major software companies to instilling software development with security.

IBM's purchase of Watchfire brought the latter company's application security tool under the IBM Rational software brand, and IBM has since integrated its Rational software quality management tools with Watchfire's security and compliance testing services. IBM officials noted that Watchfire also complements the company's Tivoli access, identity and compliance management software offerings, as well as the work of IBM Internet Security Systems. Watchfire does so by extending security and compliance testing as an integrated element of the application development life cycle.

HP's acquisition of SPI Dynamics was completed Aug. 1, and the entire line of products was swept under HP's umbrella, becoming the Application Security Center. SPI Dynamics' Atlanta office remains for the moment, along with most of the company's staff and services, including the SPI Labs research and development facility.

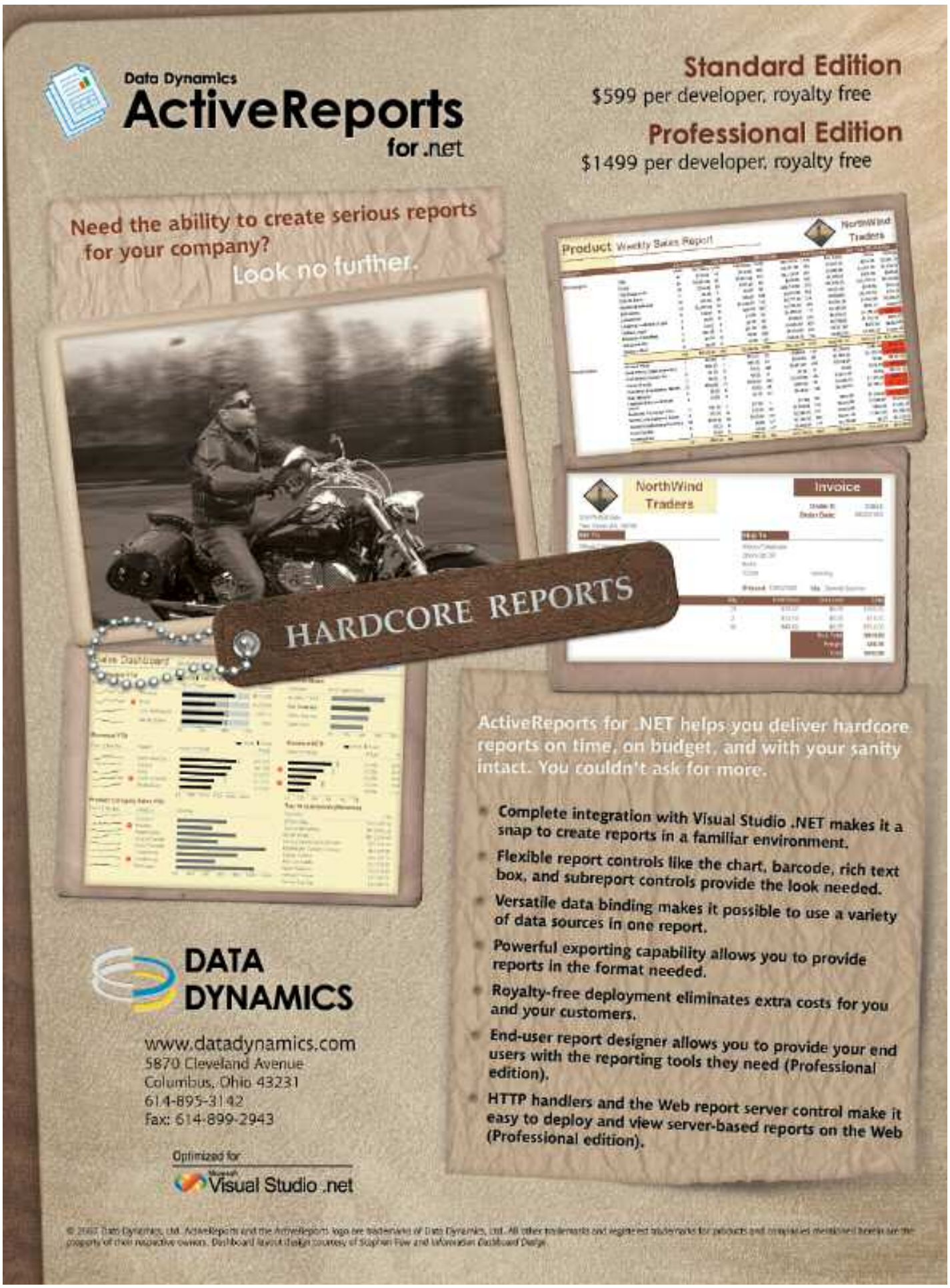
REDMOND WASN'T BUYING

Perhaps the most intriguing acquisition was the one that didn't happen, as Microsoft stood pat while HP and IBM ran their plays. Some experts claim that Microsoft can use a top-quality security solution to go along with Visual Studio Team System. Some argue that rather than creating its own remedy for the lack of security in Visual Studio, the best way for the company to cure this weakness in its portfolio is through acquiring an established security player.

With the dust settled after the completion of the two major acquisitions of 2007, some of the companies that still remain on the application security landscape are Fortify Software, Klocwork and Ounce Labs. With Microsoft, Borland Software, Oracle and Sun Microsystems among the major players that still lack integrated security within their IDEs, it will be interesting to see if other acquisitions come to pass.

More emphasis was put on the amount of protection in emerging technologies.

The OpenAJAX Alliance announced OpenAJAX Hub version 1.1, a small JavaScript library that allows multiple AJAX toolkits to work together on the same page. One of the key problems with keeping mashups secure, according to David Boloker, CTO of emerging technologies at IBM and a founder of the alliance, is that they come from multiple domains. OpenAJAX Hub 1.1 tries to remedy this, he said, by isolating mashups into secure sandboxes. ▮



Agile Principles Are Changing Everything

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Some teams that take that approach believe it is, said Forrester analyst Carey Schwaber, author of "The Truth about Agile Processes," an August 2007 report. But "wagile"—that's traditional waterfall development with a couple of agile practices thrown in—may be a better way to describe such efforts, she said.

A process becomes agile when one practice leads to another practice, said Freeman-Benson. He offered an example: "You decide to do continuous integration [which means a new build is launched each time new code is checked in]. That, in turn, impacts how you interact with users, how often those interactions take place, and how you do test cases."

Schwaber concurred, saying, "You can't apply just one part of agile without ultimately applying it everywhere."

The trick is choosing a balanced set of practices, added Freeman-Benson. "But you don't have to choose the exact set that Kent Beck chose," he said, referring to XP's inventor.

The Eclipse Foundation practices its own agile development approach. Known as the Eclipse Way, it sets guidelines for the 87 projects that fall under the Eclipse umbrella.

FAITH VERSUS FACTS

The experts interviewed by SD Times were quick to weigh in on what's agile and what's not. But curiously, the question of whether agile practices actually produce better software, faster, doesn't generate as much discussion. It's as if a lack of faith in traditional software development methods—plagued by late projects, cost overruns and applications that don't deliver business results—equals a belief in all things agile, despite the absence of data on agile's impact.

The Forrester report noted that agile benefits—reduced time-to-market, better quality and improved predictability, among others—are widely recognized. "But they have not been empirically proven," the report said. Still, agile shops offer anecdotal evidence that the approach works. Ray Goodman, a senior vice president for inventory software developer Direct Tech, said Scrum has reduced development cycles from six months to about three or four—not counting one pre-Scrum project that took two years. "But we don't yet have a sense of how Scrum has impacted the business [overall]."

Ken Judy, vice president of software development for Oxygen Media, reported that agile has "made our work more innovative, maintainable and predictable." The cable television network has practiced its own variant of XP and Scrum since 2004 and has not measured whether this approach is faster than waterfall. Oxygen software developer Wendy Friedlander said adopting agile has enabled the development group to focus on what the business needs in ways that weren't possible with waterfall. "If your goal is to produce something people will use, agile is the best way to work." ■

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/n software Red Carpet™ Subscriptions give you everything in one package: communications components for every major Internet protocol, SSL and SSH security, S/MIME encryption, Digital Certificates, Credit Card Processing, ZIP compression, Instant Messaging, and even e-business (EDI) transactions. .NET, Java, COM, C++, Delphi, everything is included, together with per developer licensing, free quarterly update CDs and free upgrades during the subscription term.

programmers.com/nsoftware

Paradise # D77 09101L01
$1,444.99

Vizioncore vReplicator
by Vizioncore

vReplicator is the real-time replication solution for the VMware ESX Server environment. Replication is performed outside the guest at the Service Console. The replication scheme is based on time elapsed and/or the size threshold for changes in the cache of the files being replicated (.VMDK and .VMX). With vReplicator, the entire virtual machine is replicated, including configuration settings, patches to the OS, the applications themselves as well as the data and all other OS-level changes.

Paradise # V79 04201E01
$441.99

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Altova® MapForce® 2008
Visual Data Conversion, Transformation, and Integration Tool
by Altova

MapForce: The premier data mapping, conversion, and integration tool from the creators of XMLSpy®. Through its visual interface, users can map seamlessly between any combination of XML, database, flat file, EDI, and/or Web service, then convert data instantly or auto-generate an application for recurrent transformations. Languages for code generation include: XSLT 1.0/2.0, XQuery, Java, C++, and C#.

New Release!

Enterprise Edition
1 user
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$1,184.99

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StorageCraft ShadowProtect IT Edition v3.0
by StorageCraft

Create, edit or restore backup images on as many servers, desktops and laptops as needed. Create online or cold state backups in minutes, no software installation required. StorageCraft™ ShadowProtect IT Edition provides complete bare metal recovery in minutes. ShadowProtect IT Edition provides IT Professionals with a bootable Windows environment to create and restore compressed and encrypted backups, no software installation required.

Paradise # SC5 03101A01
$3,294.99

programmers.com/storagecraft

Telerik RadControls
by Telerik

Add grid, combo, editing, navigation and charting functionality to your AJAX and ASP.NET projects. RadControls for ASP.NET enhances your Web applications by adding AJAX functionality to your ASP.NET projects. The suite takes full advantage of the features included in Visual Studio 2005. RadControls for ASP.NET helps developers deliver feature-rich, standards-compliant (WAI-A, WCAG 1.0, XHTML 1.1) and cross-browser compatible Web applications, while significantly cutting their development time. RadControls for ASP.NET includes: RadEditor, RadTabstrip, RadInput, RadCalendar, RadUpload, RadWindow, RadAjax, RadGrid, RadCombobox, RadMenu, RadSpell, RadChart, RadTreeview and more.

Single Developer
Paradise # TB30026
$549.99

programmers.com/telerik

Multi-Edit 2006
by Multi Edit Software

Speed, depth, and uncompromising access to the inner workings of the machine, Multi-Edit 2006 delivers it all. A top tier program editor, ME2006 provides a single environment in which can control all your VCS programs and compilers, and at the same time integrate with your existing RAD environments. Easily handle large (the only limit is your hardware) DOS/Windows, UNIX, binary, and Macintosh files in over fifty programming languages. Right out of the box, ME2006 comes ready to roll handling large DOS/Windows, UNIX, binary and Macintosh files in over 50 programming languages including Ruby, XHTML and more.

1-49 User
Paradise # A30 01101A01
$77.99

programmers.com/multiedit

800-445-7899 programmersparadise.com

Prices subject to change. Not responsible for typographical errors.

Integration's the New Face of ALM

BY JEFF FEINMAN

Application life-cycle management has undergone an intriguing change of focus in the past year as companies have begun to adopt a more open approach.

Until now, most companies in the ALM market have tried to offer a full ALM catalog, gathering up outside tools through acquisitions with the aim of stringing together a full ALM suite, from requirements gathering straight through to deployment. One of the major criticisms of "acquisition ALM" was that tools picked up in this fashion lacked integration.

However, a number of companies have begun to roll out the integration capabilities themselves, offering open platforms that are not vendor-specific.

One of the companies leading this trend is CollabNet, which has touted its ability to get development teams started on process-based ALM. With the release of CollabNet Enterprise Edition 5.0 in September, the company made a push into the ALM market, allowing an organization's process and design goals to be customized through wiki-style editors.

Earlier in the year, Borland Software introduced its Open ALM concept, a means to offer customers the ability to use any combination of life-cycle tools, whether commercial or open source. As part of its Open ALM strategy, the company released Gauntlet, a build and test automation system that can work with any type of version control system and isolate data defects until they can be fixed.

Another company that has carried a more open ALM approach is Kovair Software, whose Omnibus Integration Bus for IT can integrate disparate ALM tools from different makers. The Omnibus Integration Bus serves as a linking tool between different aspects of the application life cycle, including requirements management, project and portfolio management, and change management.

'ALM 2.0'

2007 was also the year that Carey Schwaber, an analyst with Forrester Research, coined the term "ALM 2.0" to reflect the trend swaying toward single-repository solutions and away from individual tools for each life-cycle phase. She said the new options are more appealing to software developers.

"To get ALM from IBM today, you need to buy all the tools and then the services to tie them all together. That's much more costly than turning on CollabNet tomorrow," she said.

Elsewhere in the ALM market, MKS added the ability to reuse requirements in MKS Integrity 2007, its flagship ALM platform. Perforce Software released an SDK for the Perforce Defect Tracking Gateway, which gives users a way to develop new plug-ins that can implement customized ALM solutions. Seapine Software, meanwhile, added a new folder system that allows developers to organize test cases and test runs in TestTrack Studio 2008. Serena Software focused on business mashups with the release of Mashup Composer and Mashup Server. ▮

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Illustration from www.openhandsetalliance.com

More Than Just the iPhone

Embedded and mobile spaces are starting to favor Linux, virtualization

BY P.J. CONNOLLY

Looking at the world of embedded and mobile devices from the outside, one could be forgiven for thinking that the year 2007 was sponsored by the letters G and I. After all, between the hype over Apple Computer's iPhone—which started at the January Macworld Expo and has only now begun to quiet down—and the frantic baying of the media hounds over what we all thought was going to be the Gphone, it's been a full year of handsets that became bigger stars than the spokesmodels.

Granted, the iPhone's global presence is more sizzle than steak, with worldwide rollouts continuing into next year and an SDK slated for 2008 that could very well ensure the platform's usefulness for business users as well as music and video lovers. Meanwhile, the Open Handset Alliance—which is pushing the Android platform that the rumored Google phone turned out to be—is just getting started and expects to deliver the first version of its platform next year.

Apple's iPhone

But those superstars represent just the tip of the iceberg for embedded and mobile developers. The year 2007 saw Eclipse become the development platform of choice for an increasing number of coders, as vendors realized the strengths of the open source tool set. Multicore hardware began presenting embedded developers with challenges that their colleagues developing for big iron have faced for years.

Virtualization was hot in every other aspect of IT in 2007, and it was no surprise that it's being adopted for embedded development as well. XenSource's September announcement of a virtualization platform for OEMs may herald the day when most mobile devices use virtualization technology to abstract the hardware from the application platform, making devices more flexible and useful.

But perhaps the item with the most long-term impact on embedded and mobile development is Linux. There's always going to be a role for internally developed operating systems that are explicitly designed for a specific bit of hardware—they're just becoming more capable, as seen by Symbian's addition of Java support to its Series 40 platform for mass-market devices.

Nevertheless, it's becoming clear that Linux is proving flexible enough and robust enough to be useful as an embedded or mobile platform. For example, MontaVista Software was able to talk up the performance of its Linux-based Pro 5, claiming that it could beat real-time requirements in a number of cases.

Meanwhile, in recognition of the strength of numbers, industry players set up the LiMo Foundation with the aim of promoting Linux as a platform for mobile devices, and welcomed a second wave of members that ranged from carriers to chip makers. Even Intel caught the community bug, releasing the latest version of its Mobile Platform SDK as an open source project in July.

Although the embedded and mobile space will always be far more fragmented than the laptop, desktop or server markets, one thing is clear: The overlap of technology between the first group and the second is greater than ever before. 2008 should see even more work in that direction. ▮

Green Hills Opens Padded Cell Doors

'Secure' virtualization built on Integrity

BY P.J. CONNOLLY

Sometimes, a padded cell can be a good place.

Green Hills Software certainly thinks so, having named its recently announced secure hypervisor just that. The company calls Padded Cell the world's first secure hypervisor, and it runs on top of the company's Integrity separation kernel.

Green Hills is pushing the Padded Cell architecture as a superior way to implement virtualization with its use of kernel-level security policies and virtual machine separation. This is meant to avoid the problem of an attacker subverting the hypervisor itself and taking over the entire virtual infrastructure, the company notes. Founder and CEO Dan O'Dowd explained in the announcement, "Existing hypervisors actually make security problems worse, by providing another avenue for attack."

Padded Cell allows the virtualization of a wide range of operating systems, including BSD, Red Hat Linux, Solaris and Windows, according to the company, but it doesn't stop there. It also works with the Integrity and Linux operating systems, as well as Wind River Systems' VxWorks, for use in embedded deployments. Green Hills claims to be the first to offer a secure virtualization platform for VxWorks.

But the virtualization support isn't just about software. Padded Cell can take advantage of hard-based virtualization support, such as Intel's vPro technology. This, said Intel's Gregory Bryant in a statement, allows Green Hills to "enhance the security capabilities of its Integrity PC" desktop platform by taking advantage of such features as trusted execution. Bryant is vice president of Intel's digital enterprise group and general manager of the digital office platform division. ▮

MOBILE COMPLEXITY MEANS OPPORTUNITY FOR WIND RIVER

BY P.J. CONNOLLY

Although in some ways the job of developers has grown easier as handheld and mobile devices have become more capable, the trade-off has been that the complexity can be overwhelming.

In an attempt to address the conundrum, Wind River Systems last month released the latest version of its JTAG embedded device development tool set, Wind River Workbench 3.0, On-Chip Debugging. The update includes support for new processors from ARM, Freescale, Marvell and Texas Instruments.

Workbench On-Chip Debugging now allows developers to examine all aspects of device software running Wind River Linux 2.0. With the 3.0 release, they can debug the kernel as well as user mode applications, and debug real-time applications running on top of the company's Linux Real-Time Core.

Developers for ARM-based systems can now use compilers from ARM and GNU with Workbench 3.0, On-Chip Debugging; the company notes that this allows developers to tailor tool chains to meet the particular needs of a project.

New Workbench plug-ins provide an editor, a register and memory viewer and a target manager; the Workbench platform is now aligned with the Eclipse 3.3 release with version 4.0 of the C/C++ development tools. ▮

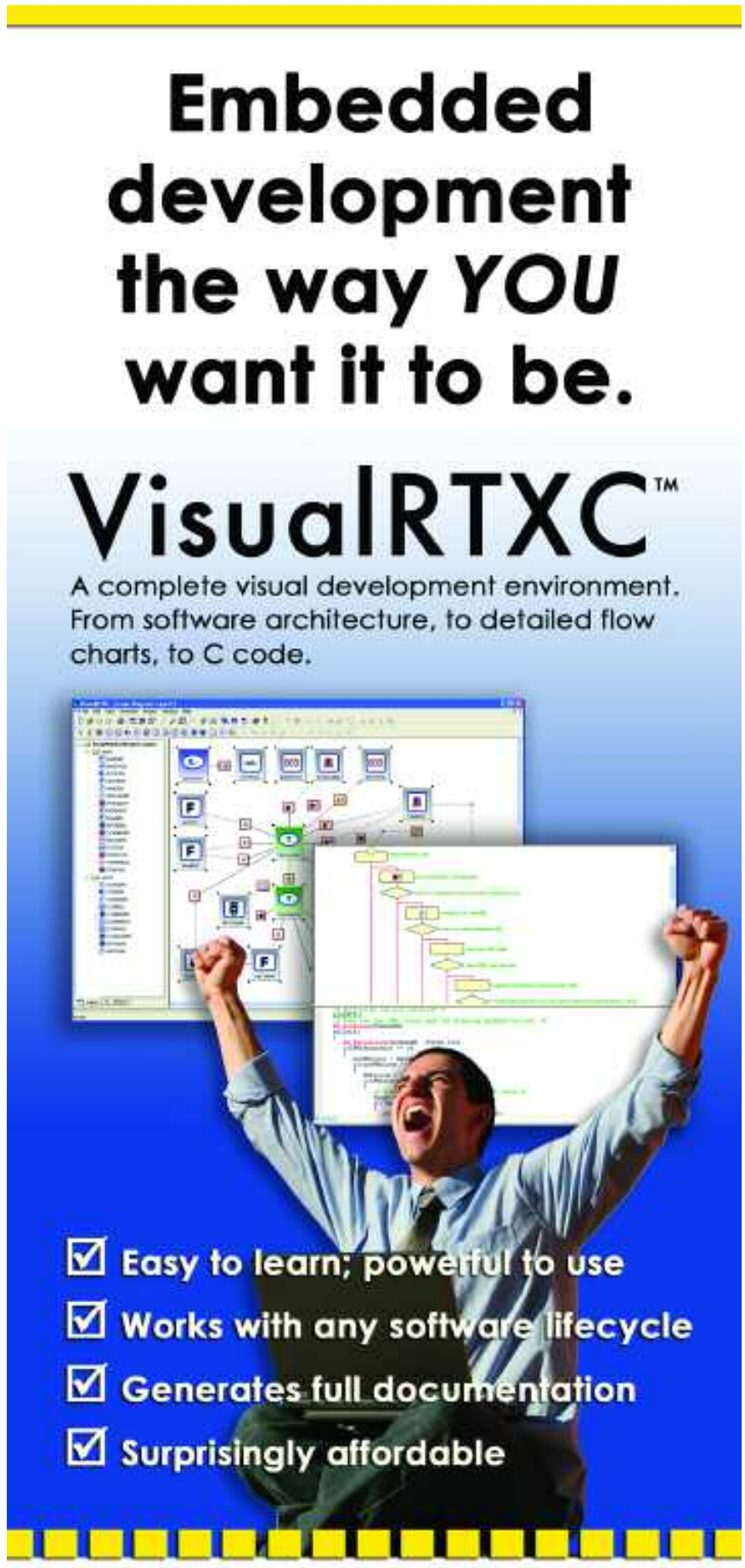
LynuxWorks Updates Safety-Critical RTOS

BY P.J. CONNOLLY

Developers of safety-critical systems that wanted to use TCP/IP and UDP networking to communicate between devices have lacked protocol stacks that were certified for use in such a role. But LynuxWorks may have changed all of that with the latest update to its LynxOS-178 real-time operating system.

LynxOS-178 release 2.3, which became available Dec. 10, features an overhauled Lynx Certifiable Stack that the company calls the "richest…partition-aware ARINC 664-capable DO-178B level A…network stack on the market." In short, that means it adheres to the aviation industry's specification for using deterministic Ethernet as an avionics databus (ARINC 664), and meets the most stringent guidelines for airworthiness, in situations where failure would be catastrophic (the A level of DO-178).

The company also noted that the new stack would allow developers to use the profiling and debugging tools of its Eclipse-based Luminosity IDE, adding that not only could developers now use deterministic networking in safety-critical systems, but field test them as well. ▮



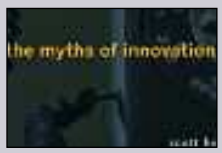
Catching Up With Recommended Reading

Ten titles to expand one's view of IT

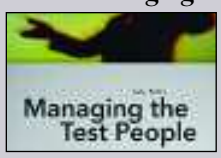
BY P.J. CONNOLLY

There's no such thing as having enough time to read everything that one might want to, especially when one has to develop skills both vertically and horizontally. But once the books that address highly technical skills are purchased, the trick is to find works that expand one's view of the IT universe. Here's a look at some of the more interesting books that were published in 2007:

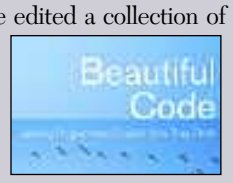
Jeremy Sydik's **"Design Accessible Web Sites"** (Pragmatic Bookshelf) explains how to build Web sites that are rich with content, while making all users feel welcome regardless of platform or constraints.



"The Myths of Innovation" (O'Reilly), by Scott Berkun, discusses the history of innovation and how ideas become earth-changing technologies. He discusses the roles of collaboration and persuasion in the process.



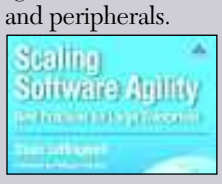
In **"Managing the Test People"** (Rocky Nook), Judy McKay examines the challenges that are unique to the software quality assurance process, while presenting real-world examples for the benefit of technical managers inside and outside of QA and testing roles.



Andy Oram and Greg Wilson have edited a collection of developer experiences in **"Beautiful Code: Leading Programmers Explain How They Think"** (O'Reilly). The contributors go beyond formulas and reveal how they solved the most difficult and unusual problems they found when working on high-profile projects.

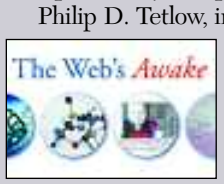
"Security Metrics: Replacing Fear, Uncertainty, and Doubt" (Addison-Wesley Professional) is a best practices guide prepared by the Yankee Group's Andrew Jaquith that attempts to bring together the quantitative viewpoint of management and the pragmatic approach of security professionals.

"Computer Architecture & Organization: An Integrated Approach" (Wiley) is an introduction to computer systems and architecture from Miles J. Murdocca and Vincent P. Heuring that connects the programmer's view of a system with the underlying hardware and peripherals.

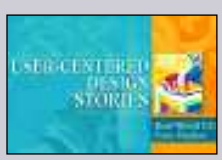


Dean Leffingwell, in **"Scaling Software Agility"** (Addison-Wesley Professional), attempts to demonstrate how agile principles that are generally seen as suitable only for small teams can translate to larger enterprises.

"Developing Quality Metadata" (Elsevier) builds on the experience of author Cliff Wootton, formerly technical systems architect for the BBC News Interactive TV group. It demonstrates how to make metadata accurate and coherent with one's own solutions, and how to approach problems with metadata proactively and productively.



Philip D. Tetlow, in **"The Web's Awake"** (Wiley-IEEE Press), makes the case for the view that the Web's complexity and scope have begun to outstrip our ability to control it. The author examines the virtual anatomy of the Web and attempts to present a sociotechnical perspective rather than a strictly mechanical one.



"User-Centered Design Stories" (Morgan Kauffman) puts one in the driver's seat, in what authors Carol Righi and Janice James call the first casebook for UCD. The reader is presented with dozens of work situations and asked to present solutions for the problems, which cover a number of key tasks and issues. ▮

THE BEST SITES FOR DEVELOPERS

The year's most useful Web sites

BY ALEX HANDY

A terrific compendium of developer links, added by users every minute.
www.dzone.com

Java tutorials, hints and tips.
www.java2s.com

C# tutorials.
www.functionx.com/csharp

For technology news and the latest in news and funny, Digg is tops.
www.digg.com

The Yahoo User Interface Library will help ease Web development.
developer.yahoo.com/yui

The University of California, Berkeley's entire retinue of lectures, on all subjects, available for free.
webcast.berkeley.edu/courses.php

Or if one prefers an East Coast perspective, the Massachusetts Institute of Technology long ago opened its courses, via OpenCourseWare.
ocw.mit.edu

AJAX widgets for Microsoft developers.
ajaxwidgets.com

A massive list and index of information programmers need, such as file format info and the like.
www.wotsit.org

Google Code, all you need to know about Google's APIs and code.
code.google.com

A turbocharged code search engine.
www.krugle.net

IBM's public skunkworks: alphaWorks.
www.alphaworks.ibm.com

IBM developerWorks for coders of all sorts.
www.ibm.com/developerworks

The Microsoft Developer Network.
www.msdn.com

Sun Microsystems' hub of all things Java.
www.java.net

And finally, for Linux coders who hate memory leaks: Always use Valgrind.
valgrind.org

Web 2.0, GPLv3, iPhone

◂ continued from page 1

player in software test.

3. Web 2.0 raises security concerns. Rich Internet applications are attractive to consumers because they make the Web more pleasant to use. They're also attractive to hackers because the new technology introduces the potential for new (and nasty) vulnerabilities. We reported that development managers are nervous about the implications of AJAX and other RIAs for their application. We're nervous too.

4. GPLv3 is completed, and the lawsuits start. This was a surprise for two reasons. First, the controversial GNU General Public License update was far less acrimonious than expected. After all the protestations, it launched with scarcely a whimper. And second, we have this company, BusyBox, suing companies for violating its open source license by embedding its code without releasing the end product back as open source. We suppose that someone's got to be the test case…but who are those guys, anyway?

5. Big disconnect about SOA and SasS and mashups. The challenge is that many organizations don't know the difference between service-oriented architectures, software as a service and mashups. Vendors think that SOA is strategic, but enterprises see it as a tactical integration methodology. Analysts think that SaaS is taking over the world as a new paradigm, but enterprises see it as a tactical, case-by-base decision. As for mashups…where are they?

6. The REST versus WS-* wars kick off. The WS-* group of standards is huge, unwieldy, but robust. The REST specs for Web services communications are agile but limited in scope. Both REST and WS-* are important tools for

Best Blogs of 2007

From the authoritative to the wacky

BY DAVID WORTHINGTON

Businesses and individuals use blogs to disseminate information and share their perspectives. Whether it's a conscious decision or not, people are frequently turning to blogs for information as part of their personal media mix.

That trend continued in 2007 as bloggers—some established and some less well-known—found continued success. SD Times hand-picked some of the year's most interesting technology blogs.

FAKE STEVE JOBS
fakesteve.blogspot.com

Writing under the pseudonym Fake Steve Jobs, Forbes Magazine senior editor Daniel Lyons parlayed satire into an Internet phenomenon. The blog was widely cited in media and, albeit "fake," made some points that rang true in the real world.

ISTARTEDSOMETHING
www.istartedsomething.com

Long Zheng has started something all right. It began when 19-year-old Zheng began uncovering snippets of information that Microsoft had kept under wraps about the Windows user experience during the development of Windows Vista. The blog, he says, was inspired by his professional interest in graphics and design. It now averages more than 400,000 hits per month.

JOEL ON SOFTWARE
www.joelonsoftware.com

Joel Spolsky remains a trusted authority on software development due to his sagacious insights on the development and marketing of software.

JKONTHERUN
jkontherun.blogs.com

James Kendrick may be a man on the run, but he finds the time to dish on the latest in mobile technology. This blog features news and reviews about everything mobile. Kendrick claims to have been using mobile devices "since they weighed 30 pounds." In our estimation, he is now a much faster runner since he got rid of the Compaq Portable.

LAMBDA THE ULTIMATE
lambda-the-ultimate.org

Its creators call it "The Programming Languages Weblog" for an obvious reason: This blog exists to publish programming language research and to discuss bordering issues such as programmability.

LIVESIDE.NET
www.liveside.net

Want the skinny on Microsoft's Web 2.0 strategy? Look no further than LiveSide.net. LiveSide grew out of the Windows enthusiast community and doesn't miss a beat about what is going on in the Redmond company.

MIGUEL DE ICAZA'S WEB LOG
tirania.org/blog

GNOME project founder and Novell executive Miguel de Icaza is not one to shy away from controversy. The open source advocate started his year by defying convention and publishing a rigorous defense of Microsoft's Office Open XML. de Icaza has been instrumental in explaining how to make Microsoft's Silverlight runtime work with Linux.

SCOTTGU'S BLOG
weblogs.asp.net/scottgu/default.aspx

It is no accident that Scott Guthrie, general manager within Microsoft's developer division, has cultivated a following among developers. Guthrie regularly shares helpful tips about Microsoft platforms and products and has become a respected thought leader at the Redmond company. That said, he claims that his experience has given him no "inspirational thoughts" to share other than, "It is a great way to connect with developers, help discuss good technical questions, provide roadmap transparency, and overall learn a lot in return from the feedback/questions it brings."

TECHNO.BLOG ("DION")
almaer.com/blog

Dion Almaer is a respected programmer working for Google on projects that include Google Code and Google Gears. Almaer uses his blog to discuss the latest technology—with a heavy emphasis on bleeding-edge Web programming.

WIDGIFY
www.widgify.com

On his blog, Hooman Radfar, founder of Clearspring Technologies, attempts to make sense of the fast-paced world of social applications, widgets and the distributed Web.

And last, but not least…

Z TREK: THE ALAN ZEICHICK WEBLOG
ztrek.blogspot.com

The "Z" in BZ Media, co-founder and SD Times editorial director Alan Zeichick has an entertaining blog and is authorized to sign year-end bonus checks. Zeichick offers "pithy observations and timely analysis" about information technology and software development—and whatever else strikes his fancy at a given moment. You might learn something about his favorite music—or his thoughts on multicore application design. ▮

Mark 2007

an enterprise toolbox. Sadly, some developers are trying to turn this into a religious war.

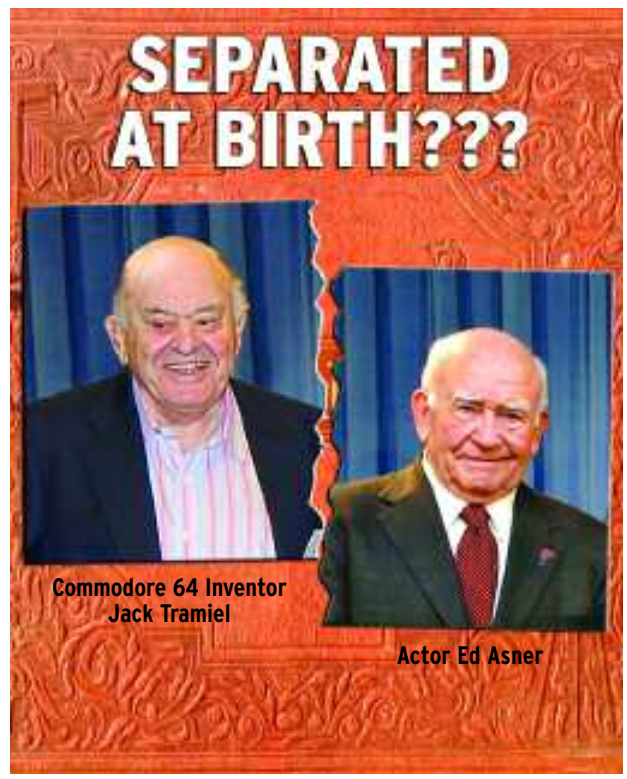
7. Microsoft loses the first round in the Office Open XML standardization efforts. Microsoft's attempt to push through a super-complicated proprietary standardization for an OSI rubber stamp failed. However, there appears to be little doubt that OOXML will be standardized at some point. Microsoft will not back down, and eventually its ruthless lobbying will succeed.

8. Microsoft Silverlight takes on Adobe Flash. Flash has served as the de facto platform for multimedia Web delivery for a long time—and Microsoft, justifiably, wants to challenge that with its new Silverlight product. The developers in Redmond have to go a long way before their Flash-killer can draw blood, but they win kudos for not limiting it to running on Windows and Internet Explorer.

9. Windows Vista fizzles while Mac OS X "Leopard" sizzles. The biggest question that consumers and enterprises asked about Windows Vista is, "Can I still get Windows XP on my new computer instead?" While Windows Vista offers good eye candy, it just hasn't caught on, and the complex licensing and hardware requirements don't help. Meanwhile, Apple's Mac market share expands while Mac OS X 10.5 "Leopard" roars out the gate to great fanfare—despite an inexcusable number of bugs.

10. iPhone meets Gphone. Mobile phones have served the enterprise for years—just look at the BlackBerry and Palm Treo. The gorgeous iPhone, with its large screen and full-featured Web browser, took the world by storm. Too bad that the phones are locked to a limited number of carriers. When Apple finally lets developers write native apps, the iPhone will explode. But soon, Google's forthcoming Android software platform will give the iPhone a run for its money, raising the bar for the whole mobile industry.

11. SCO imploded. The long-standing lawsuits that SCO brought against companies like IBM and AutoZone evaporated when the courts ruled that Novell, not SCO, owned key Unix intellectual property. Its arrogant protection racket a failure, SCO is now in bankruptcy. With the exception of its backers, investors and employees, it's hard to find anyone who doesn't rejoice in Darl McBride's comeuppance. ▮



FROM THE EDITORS

Buzz, or Buzz Kill

After much discussion and debate, SD Times can now declare that it is in favor of 2007, and expects to throw the full weight of its support behind 2008.

Kidding aside, 2007 opened dialogs on fascinating topics, ranging from virtualization to security, open source licensing and patent protection, multicore processors, dynamic languages and social networking, to name but a few.

Virtualization got a boost from VMware's successful IPO and the acquisition of XenSource by Citrix, and we expect to see ALM vendors partnering with the big virtualization players or acquiring emerging startups.

Security too became all the rage as acquisitions from IBM and HP thrust the topic squarely into the laps of development organizations. Multicore opens up a whole new world for financial companies and others that need near real-time processing power to handle the huge volumes of transactions that are electronically triggered each day.

The ramifications of the illegal use of open source—however unintentional—probably scared off many companies that could benefit from the cost savings and ability to customize applications as needed. Ruby, PHP and other languages, along with lighter-weight Java containers from Apache and others, emerged as serious enterprise alternatives to heavy Java.

Social networking has become ubiquitous—MySpace, Facebook, LinkedIn and other sites are bringing workers together in new ways.

Yet equally surprising, according to input from our informal board of industry analysts, are the things people no longer seem to be discussing: governance, legacy systems, Java, modeling and Web services, again, to name a few.

It's not that those areas have slipped in importance. Governance, as embodied by Sarbanes-Oxley, is an important requirement for most large organizations. The ability to use data stored in legacy systems, and to repurpose that information for modern architectures, is critical to many of those same enterprises. Java remains an important enterprise platform and development language, modeling is huge in huge organizations, and Web services have all but become the way organizations share information with one another, and with their customers.

It's just that these areas have reached a certain critical mass so people aren't wringing their hands over them and debating about alternatives anymore; they're simply implementing them.

We are excited to see what 2008 brings, and wonder what "next best thing" will come to dominate our coverage and discussions. Happy New Year to all!

Commodore Leads a Generation

When Jack Tramiel poked his head out of his secret lair last month to celebrate the Commodore 64's 25th birthday, the true influence of that marvelous and inexpensive machine was shown. Dozens of adoring fans waited in line to meet the man and thank him for putting the C64 into their then-young hands. The machine influenced a generation of computer users, and more important, developers.

It's hard to deny the brutish nature of the C64's interface. The machine came with little software beyond the BASIC programming language, and as the years went by, programmers around the country figured out how to use this simple environment to create decidedly nontrivial applications.

The world inspired by the C64 continues to this day, with some programmers still building demos for the C64, while others program straight to the nVidia GPU of their Windows PCs.

Tramiel is an odd figure in the pantheon of personal computer history. Unlike his uber-geeky peers, he was and is a businessman, not a computer scientist or even a geeky enthusiast. For him, the C64 was about mass production and mass appeal. But for its users, the C64 was about discovery. As a platform, it was and is unmatched in popularity. And for a generation of developers, it was their first step into a larger world. ▮

How Much REST Do We Need?

Long live WS-*! WS-* is dead! REST is great! May it rest in peace!

Which one is it? WS-* or REST? It turns out that both camps are lying about how "easy" it is to build distributed business applications using their favorite technological approach.

In fact, there is no easy way to build distributed applications; it's simply a hard problem. WS-* and REST (Representational State Transfer) each has its own strengths and weaknesses. Knowing the realities of these different approaches for building distributed systems is critical for being able to make the right choices.

Once you cut through the cloud of hype, it becomes much easier for the confused enterprise architect to understand what to use and when. So let's take apart the WS-* versus REST debate and clearly separate the facts from the myths and the lies:

WS-* Camp: You need WS-* to build Web services.

Reality: Not true. There are a great many services that do not need WS-*. As long as your requirements are satisfied by the security offered by HTTPS and HTTP Basic Authentication, and you don't need message reliability or transactions, just using REST is the right answer.

To look at this at a lower level, if you're using SOAP to communicate and don't have any headers, then SOAP is not adding any value over a simple XML-over-HTTP approach. Switch to REST instead.

REST Camp: You can build any Web service you need with REST.

Reality: Theoretically you could, but that's not the right practical answer. While there are many services that do not need rigorous security and reliability at the message exchange level, there are also a great number that most certainly do. For example, if you're dealing with medical records, end-to-end security and reliability are absolutely essential.

In that case, you do need the WS-* protocols over HTTP; WS-* is essentially a set of standard, interoperable protocols to achieve these qualities of interaction over any underlying protocol, including HTTP.

The strength and value of WS-* is not its incredible technical beauty—to mimic a comment I'll refer to later, any damn fool could come up with a better way to sign and encrypt messages and a way to exchange them reliably, but getting the entire world to accept that approach is the problem. WS-* has been through that pain—all the core parts of WS-* are now standards and are supported by ALL major and minor vendors.

If you don't use these, you need to essentially invent similar protocols over basic HTTP, which eventually would result in REST-*! That does not achieve anything other than satisfying your urge to support the "not invented here" syndrome. Fans of technology for the sake of technology will undoubtedly build REST-*, but street-savvy enterprise architects would be best off ignoring it.

WS-* Camp: XML is the best language to communicate in.

Reality: XML is not the best data communications format. Even one of the original inventors, James Clark, said, "Any damn fool could produce a better data format than XML." But just as English has emerged as the lingua franca of the business world, in the tech world, this role is filled by XML. XML is simply the language that everybody has accepted.

REST Camp: JSON is the best language to communicate in.

Reality: JavaScript Object Notation certainly has its advantages, including compactness, better alignment with object-oriented programming languages and programmer readability. However, we can't use JSON out of the box from a mainframe to a cell phone in a way that is already possible with XML. Also, JSON doesn't come with the rich set of tools that XML does: XPath, XSLT, XML Schema, Relax NG, etc. JSON is great for AJAX scenarios, but it's not in the same league as XML as a universal data format, especially when the data is not serialized data structures but rather documents. It may get there, but we're far from it right now.

REST Camp: You don't need a description language because everything has a uniform interface and is self-describing.

Reality: REST takes the approach that the media type you get back from the server is a sufficient description of what that URI is supposed to return. While that is sufficient for the dynamic environment of the Web, where the browser simply has to use the media type to display the content in a human-readable form, developers writing programs need to know beforehand (i.e., at development time) what they will get when they GET a specific URL. Without that, there can't be any tools that make it easier to process the data. REST fanatics argue that such tools represent a form of coupling and hence are bad for the loosely coupled architecture of the Web. While true at a strictly theoretical level, it's simply unrealistic at a practical level.

WSDL is by no means the best possible description language; in fact, any damn fool could come up with a better one! (Given I'm one of the damn fools who came up with WSDL in the first place, I have no shame in admitting it.) However, it again has an incredible advantage: It is supported by all major

vendors. Until we get a more widely accepted replacement, if you're writing Web services, you should describe them in WSDL even if they're RESTful services. The recently standardized version of WSDL (2.0) is significantly improved from WSDL 1.1 and offers a very nice and simple way to describe both RESTful and non-RESTful services.

WS-* and REST Camps: You can simply take legacy apps and make them into a WS-* or REST service.

Reality: Both camps are guilty of promoting this fantasy. Despite WS-* fans' claims to the contrary, there's no way you can simply take your old Java classes and magically SOA-enable them. You need code that understands the proper granularity of interactions in a SOA and the underlying business processes, and then you can make them into a service.

Creating a RESTful interaction with an application is no trivial matter either. In fact, there's still quite a bit of art in creating proper REST services, and tooling support is minimal to nonexistent. For certain applications, of course, there is a natural and simple mapping (as with certain other applications for WS-*), but otherwise you need to be a REST artist.

To create a good RESTful interface, you need to understand REST (which by itself can be quite tiring), figure out how to create the proper resource structure for your artifacts, and finally figure out how to create and manage links between them. The last part is nontrivial, but that represents the "hypermedia as the engine of application state" mantra of REST, which is critical for achieving many of the scalability benefits. REST may be easy for simple cases, but it will not afford you much rest when building real systems.

With so many half-truths, obfuscations and outright lies around WS-* and REST, it's tempting to toss them both out the window. But for today's distributed applications, WS-* and REST are two of the most viable and useful platforms available.

Instead, enterprise architects should consider adopting a heterogeneous approach to Web services that capitalizes on the strengths of each. For simple delivery or exchange of messages, REST offers a quick, clean, dependable approach. For more sophisticated services and SOA deployments, the rich WS-* stack provides proven, standard protocols for secure, reliable and transactional services.

When choosing middleware, select one that lets you focus on the business logic and let the infrastructure worry about supporting both REST and WS-* interfaces.

And in all cases, don't get caught up by promises of plug-and-play Web services that seem too good to be true. Building distributed systems is hard. You need to be ready to do the hard work before you and your team can rest easy…even if you don't use REST. ▮

Sanjiva Weerawarana is founder, chairman and CEO of WSO2, which sells open source middleware for SOA.

SHORT TAKES

I'VE NEVER BEEN ENTHRALLED by the idea of grid computing, as pitched by Sun Microsystems and others. When it's pitched to me as being "like the utility grid," I remember the last time the power went out. But a scheme coming out of the IBM Almaden Research Center looks like it's about to bear fruit. It's called "cloud computing," and the label strikes a chord with me that no grid ever could. After all, clouds are fluffy, while grids have holes that one can fall through. But in reality, IBM's cloud looks like it's going to require as much TLC as a grid.

—P.J. Connolly

XBRL EXCITES ME. Several years ago, I was a business student obligated to take accounting and finance classes. Many of my assignments involved re-entering data from EDGAR filings into a spreadsheet (or worse—on paper) to perform financial ratio analysis. With XBRL, information can be pulled from those filings and consumed by an analytical software tool. It will be interesting to see how this advance in technology affects teaching in the classroom and whether it will enable students to use software that simulates real-world business scenarios.

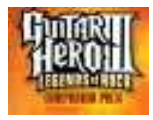
—David Worthington

I RECENTLY TRIED MY HAND at Microsoft's Popfly mashup creator, and

it wasn't a cakewalk. I thought I'd get the hang of it after watching a demo that makes it look oh-so-easy. I constructed connections between Flickr photos and Popfly blocks with snazzy display features. But when I tried to run separate Flickr searches and mash them with graphical features, things got hairy. Popfly "combine blocks" must be tied in for that to happen, and attempting to string that together "blocked" my progress. Things may improve with another swing at it, but I wouldn't score my Popfly experience as a hit.

—Jeff Feinman

ALL MY 8-YEAR-OLD WANTED for the holidays was Guitar Hero III, a computer game in which the player gets to



simulate being a rock 'n' roll idol. I don't have a PlayStation or Xbox, so I bought the version for PC. I have a Compaq Presario C300 laptop that's about a year-and-a-half old, and expected no problems. But sure enough, the video card in the laptop isn't compatible with the game. For the thousands of you similarly frustrated by software/hardware compatibility issues for PC gaming, help is as close as the Internet: www.canyourunit.com. This is a free service run by System Requirements Lab. President John Hussey said, "Users simply select the game they want to test, and hit the Can You Run It button. In less than 30 seconds a comprehensive report tells them if their computer can run it. If not, it displays what is wrong and exactly what is needed so the user can run the game." In my house, Hussey is the new guitar hero.

—David Rubinstein

Handheld Market on the Ropes?

DATA WATCH

Is the handheld device that lacks telephony going the way of the 5 1/4-inch floppy disk? Recent figures from IDC suggest exactly that, pointing out that shipments have declined for 15 consecutive quarters, dropping by almost half a million from last year's third quarter to the same period this year. According to the firm, vendors shipped 728,894 handheld devices in Q3 of 2007, almost 40 percent less than the same period of 2006.

Palm and HP remain in first and second places, respectively, for device market share, with 44.6 percent and 27.2 percent of third-quarter shipments. Their shares of the market have grown in the past year at the expense of Sharp—whose handheld business is now limited to Japan—and other manufacturers, according to IDC's figures. Fujitsu Siemens was the only major vendor recording growth, thanks to strong sales in the Europe, Middle East and Africa region, while Mio scratched out an 11.2 percent slice of the pie—up by almost 1.5 percent—by making GPS a standard feature on its devices, noted a statement from IDC.

Source: IDC

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Editorial

Editor-in-Chief
David Rubinstein
+1-631-421-4158 x105
drubinstein@bzmedia.com

Executive Editor
P.J. Connolly
pjconnolly@bzmedia.com

Managing Editor
Patricia Sarica
psarica@bzmedia.com

Senior Editors
Jennifer deJong
jdejong@bzmedia.com
Alex Handy
ahandy@bzmedia.com

Associate Editor
David Worthington
dworthington@bzmedia.com

Assistant Editor
Jeff Feinman
jfeinman@bzmedia.com

Associate Copy Editor
Adam LoBelia
alobelia@bzmedia.com

Art Director
Mara Leonardi

Art/Production Assistant
Erin Broadhurst

Columnists
Andrew Binstock
David S. Linthicum
Larry O'Brien

Contributing Writers
Mary Jo Foley
Geoff Koch
Susan Messenheimer
Lisa L. Morgan
Carol Weiszmann

Editorial Director
Alan Zeichick
+1-650-359-4763
alan@bzmedia.com

Sales & Marketing

Publisher
Ted Bahr
+1-631-421-4158 x101
ted@bzmedia.com

Associate Publisher
David Lyman
+1-978-465-2351
dlyman@bzmedia.com

Southwest U.S./Asia
Robin Nakamura
+1-408-445-8154
rnakamura@bzmedia.com

Advertising Traffic
Phyllis Oakes
+1-631-421-4158 x115
poakes@bzmedia.com

Northwest U.S./ Canada
Paula F. Miller
+1-925-831-3803
pmiller@bzmedia.com

Director of Marketing
Marilyn Daly
+1-631-421-4158 x118
mdaly@bzmedia.com

Southeast U.S./ Eastern Canada
Jonathan Sawyer
+1-603-924-4489
jsawyer@bzmedia.com

List Services
Lisa Fiske
+1-631-479-2977
lfiske@bzmedia.com

Middle Atlantic/ Midwest
Daniel Gaiman
+1-631-421-4158 x114
dgaiman@bzmedia.com

Reprints
Lisa Abelson
+1-516-379-7097
labelson@bzmedia.com

New England/Europe
David Lyman
+1-978-465-2351
dlyman@bzmedia.com

Accounting
Viena Ludewig
+1-631-421-4158 x110
vludewig@bzmedia.com

Reader Service

Director of Circulation
Agnes Vanek
+1-631-443-4158
avanek@bzmedia.com

Customer Service/ Subscriptions
+1-847-763-9692
sdtimes@halldata.com

BZ Media

President
Ted Bahr

Executive Vice President
Alan Zeichick

BZ Media LLC
7 High Street, Suite 407
Huntington, NY 11743
+1-631-421-4158
fax +1-631-421-4130
www.bzmedia.com • info@bzmedia.com

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E-Book the Ticket?

Books are the most problematic tools in the developer's workbench. I estimate that professional competence requires at least a few hundred dollars per year in new titles, while the cost of exploring developing trends can run those costs up into the thousands. Meanwhile, no matter how carefully you trim your bookshelf, the realization that "I just threw that book out!" is a common one.

While cost can be controlled (but hardly removed) by online subscriptions to services such as O'Reilly's Safari and Books24x7.com, there hasn't been a good solution for on-screen reading that comes close to the convenience of a book. For those interested in reading more than a few pages, PDAs, Tablet PCs and UMPCs have all had unacceptable compromises with their displays and batteries, and dedicated e-book devices have not seen mass-market success.

Amazon's recently introduced Kindle e-book reader is the most plausible attempt yet at legitimizing digital delivery. The first thing that has to be said about the reader is that the display technology is vastly better than any screen you've used before. The comfort of reading large amounts of text for long periods of time is simply not an issue with the e-ink display technology, which is composed of millions of half-shaded spheres that can be oriented magnetically. The result is a true black on a gray background that has a palette somewhat reminiscent of an Etch A Sketch. The display is easily readable in full tropical sunlight and has less glare than glossy paper stock (there is no backlight, an obvious shortcoming).

Windows & .NET Watch

The Kindle is smaller than I expected, with a 3.5 x 4.5-inch screen in a 5.25 x 7.5-inch device, whose real estate is fleshed out with a QWERTY thumbpad and a periphery of large buttons/levers for changing pages. I appear to be the only person in the world that likes the physical design, which seems intentionally anti-glamorous. It balances perfectly in one hand with a "Next Page" lever on either side below the thumb's natural resting place. The Kindle comes with a leather binder and, when placed inside, is to the casual glance indistinguishable from an address book or small notepad.

So much for the good. The IT professional surfing to Amazon's Kindle store will be sorely disappointed in the initial choices. The only technology publisher presenting a significant number of books at launch is Addison-Wesley, but even A-W's selection is worse than scattershot, with some excellent books, such as "Java Concurrency in Practice" and "Refactoring," but no recent books in the same series. Of the 13 books in my technical to-be-read pile, not a single one is available in the Kindle store. I went through the first 10 of this year's Jolt nominees and didn't find any. (Personal reading is much better supported, with the Kindle store going 6-for-11 on my to-be-read list.)

I asked all of the major technology publishers if they had an official position on the Kindle, and only Wiley (which was "excited to actively participate") had a stated position. I challenged Tim O'Reilly— who'd said he was "rooting for Jeff [Bezos] and the Kindle"—on the lack of O'Reilly books and Safari support. "Amazon has chosen to use a proprietary format with a conversion cost of a couple of hundred dollars per title," he said. "We'd be very eager to have a reseller relationship with Amazon, such that they resell Safari subscriptions on the Kindle."

The Kindle format is a specialization of an e-book format called "Mobi." Mobi supports, but does not require, DRM, and I opened unprotected Mobi-formatted e-books without a blink in the Kindle. Free-beer tools to create Mobi files are available on the Web. Mobi, in turn, is a specialization of the Open eBook Publication Structure, so the format is not as opaque as it first appears.

Although PDF files are not officially supported on the Kindle, I discovered that I could open PDF-formatted books from The Pragmatic Programmers on the Kindle and they worked fairly well. The caveat with PDF is that the text reflows to the screen, creating some code-formatting issues. Predictably, the more layout-dependent pages of SD Times' PDFs (available at www.sdtimes.com/download/index.html) were less successful when viewed on the Kindle.

The compatibility with an open standard gives me much greater hope for the use of the Kindle for technical content. Subscription support from Safari or Books24x7 would instantly legitimize the tool for IT professionals. In the meantime, the conversion of HTML, PDF and CHM files to e-books is quite straightforward, and I'm well on my way to filling up a 1GB SD card with reference works. ▮

Larry O'Brien is a technology consultant, analyst and writer. Read his blog at www.knowing.net.

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NetBeans 6.0: Cooking at Last

Rounding out my coverage of alternatives to Eclipse among Java IDEs, I come now to NetBeans 6.0, the release that became generally available in early December. NetBeans has long occupied the same mindshare for me as the stereotypical drunk relative. When sober and taking care of business, he's brilliant and charming; the problem is he can't maintain this groove and eventually—that is, inevitably—falls off the cart and becomes an annoying, even unpleasant fellow. After enough times through the cycle, you get tired of the bad behavior and simply break contact with him.

NetBeans has always had some brilliant, even stunning, features: the best Swing designer in the business, one of the best collaboration/messaging infrastructures (with messaging hosted by Sun Microsystems, if you want), and excellent enterprise support (one of the first Java IDEs to offer BPEL diagramming/modeling support). But it's also had some really annoying aspects: The coding and editing experience was just not very good. The interface was less attractive than most other IDEs, and it was feature-poor. As I reported two installments ago, Sun decided in early 2007 that NetBeans 6.0 would focus on this annoying part and spend less time on the dazzling stuff. It set for itself the goal of making the editing experience as pleasant as IntelliJ IDEA. With 6.0, it is clear NetBeans has come a long way in this regard and shored up its longstanding weakness. I wouldn't say that it matches IntelliJ IDEA yet, but it is certainly much, much better. And given the previously mentioned benefits, it is now in a position to take away users from Eclipse and other IDEs.

Integration Watch

Disaffected Eclipse users have feared jumping ship because of the presence of Eclipse's large plug-in universe. With so many new plug-ins entering the marketplace via Eclipse, they reason, moving to another IDE deprives them of cutting-edge features. There are several aspects to consider. First is that NetBeans has a very large ecosystem as well. Not as big as Eclipse, I grant you, but the next largest. (The three most active plug-in ecosystems are Eclipse, NetBeans and IDEA in my estimation.) Often plug-ins that are popular on Eclipse have counterparts on NetBeans. For some plug-ins, however, NetBeans has the innovative edge. For example, NetBeans 6.0 ships with JRuby and full Ruby editing support. It also has debuggers for Ruby (pure Ruby and JRuby) as well as for Rails. And Ruby Gems works right out of the box.

But back to Java editing. Among the advances in this new release are the ability to generate tests for JUnit 4.0, integration with JMeter (it already had its own sophisticated performance profiler that now can attach dynamically to Java 6 apps), an extensive database explorer with a graphical SQL builder, a task list that integrates with defect trackers (Bugzilla, Issuezilla, java.net, Scarab, etc.) and which can export tasks into an iCalendar format for import into your desktop to-do list. The Java debugger has a lovely feature I don't recall seeing elsewhere: It can step over parts of an expression. Most debuggers today can only step over a line of code; NetBeans can step within a line.

The enterprise features of NetBeans have always been solid. In addition to UML modeling (eight diagrams) with round-trip synchronization and diagramming for SOA (via BPEL and a visual SOA assembly tool), there is support for J2EE and Java EE, including EJB 3.0 and JavaServer Faces. New JavaScript and CSS editors help fill out the UI support. The enterprise features can deploy apps to WebLogic, WebSphere, JBoss 4, Tomcat and Sun's own app server and GlassFish.

By now, you're getting the idea: This IDE is plenty rich enough for most development needs. (And I have not touched on the C/C++ modules nor the mobile development support.) What is particularly pleasant about NetBeans is that despite the wide-ranging functionality, the environment never feels like a battleship in the sense that Eclipse can. Rather, it feels responsive and capable. That's a big plus. And now with the newly improved editing experience, I do believe that NetBeans 6.0 is truly in a position to vie for the crown of best free Java IDE.

I must confess, I've waited a long time for this, as the potential was clearly always there. So, if you have not given NetBeans a try in a while, this might be the time to give it a look. ▮

Andrew Binstock is the principal analyst at Pacific Data Works. Read his blog at binstock.blogspot.com.

Information Integration Patterns

I've been thinking about the patterns of information integration that we see these days, as related to SOA, in products as well as in custom solutions: information- or service-oriented. I've also been thinking about levels that make up these stacks, from the most primitive to the most sophisticated.

Keep in mind, there are differences between information/data integration, as related to SOA, and transactional or behavior integration, as related to SOA. Information integration is…well…information integration, or, the structured movement of information between one or more systems. Transitional/behavior integration is the abstraction of functions between two or more systems. If this is as clear as mud, you're right. There are always overlaps and exceptions, but it's a good idea to consider both approaches since the technology you select, as well as the solution patterns, are a bit different.

Not that these kinds of reference models provide a huge advantage, but they do provide a checklist of sorts that allows you to better understand what you may need when building your SOA, and a good framework of understanding for the enterprise.

Considering that preface, I've come up with nine levels of integration that seem to cover the patterns I'm seeing as enterprises are building SOA. Here they are:

- ***Level 0*** Simple information flow and management, no transformation and routing. This just means information is flowing from one side to the other. In essence, this is a simple pipe where data flows from point A to point B.
- ***Level 1*** Simple information transformation, but no logical operators for routing or message processing. This means just transforming one schema to another, without the ability to leverage logical operators such as "if," "then," "else," etc. In essence, no logic, just a changing of the data.
- ***Level 2*** Simple transformation and routing, with logical operators (e.g., If this, do this, etc.). You get the idea. We now can peek into messages and make calls based upon content, lookup or even externals such as time and date.
- ***Level 3*** Complex transformation dealing with multiple points and complex schemas and semantic management. Here we are managing one or more schema sources, and one or more schema targets. We also deal with the notion of complex transformation (subjective, I know), but typically that means nested transformations and complex logic, including entire programs that are attached to a transformation.
- ***Level 4*** All of the above, with transformation and flows bound to processes. Here is where we introduce the notion of processes, or the ability to bind information flow, transformation and logic to a process, meaning sequencing, flow control, logical operators, etc.
- ***Level 5*** All of the above, with information bound to services, very simple orchestration (service-oriented process... integration really). Also, no use of process/orchestration standards, such as BPEL or Choreography.
- ***Level 6*** Orchestration or Choreography, or the ability to abstract services for the production of solutions. This is where we deal with service-oriented points such as Web services, providing a binding application of sorts to combine behavior into a solution layer.
- ***Level 7*** Level 6 with data abstraction. This means we are not only dealing with abstract services, but abstract data layers as well. Thus, we're able to recast many physical databases through single or multiple abstraction levels.
- ***Level 8*** All of the above, with the notion of complex service abstraction and management added in. This means we not only have the ability to create composite processes and orchestrations, but complete composite applications as well that may or may not leverage the abstract data layer.

SOA Watch

Consider these as layers, with the higher layers depending upon the lower layers.

What's important to consider here is not the levels, but what happens as you move up the stack. Information integration is a bit tricky when it comes to SOA, and many don't consider it, nor create a SOA around an information-only approach. It's easy to do, considering that ESBs are, in essence, queuing systems with service interfaces. Thus, are they transactional/behavior-oriented, or information-oriented? Basically, you're using services to access information.

As you move forward with building a SOA, you need to keep in mind that you begin with a semantic understanding of your domain, and then move up through the layers to build data abstraction and data services for access to the data/information. Those who approach SOA this way have a tendency to succeed, considering that they are getting a handle on the data, in essence, creating a nice, logical layer before just building services on top of the data.

In contrast, those who don't consider the information and just layer services on top of dysfunctional and poorly structured data will end up with a very inefficient architecture. It will still be something that has to be addressed at some point in the future. You don't want to be that guy. ▮

David S. Linthicum is a managing partner at ZapThink. Reach him at david@zapthink.com.

A Spending Spree

Business was good for the high-tech industry in 2007. EMC continued its string of double-digit growth quarters and reaped the benefits of spinning out a portion of VMware, the leader in the hot virtualization space. Salesforce.com announced it has reached 1 million subscribers and moved closer to becoming the first billion-dollar software-as-a-service company.

The SCO Group was forced to file for Chapter 11 bankruptcy protection as a judge ruled that Novell, not SCO, owned the rights to Unix. This, of course, was good for business for Linux users, who no longer had to look over their shoulders and worry about being sued for using the software. Microsoft settled its long-running feud with the European Union, creating the appearance of opportunity for third-party vendors to get in on the browser and media player action.

Industry Watch

Revenues and earnings were mostly up from 2006; many companies even instituted stock repurchase programs, feeling undervalued in today's market, which continues to be affected by the downward pressure of the subprime mortgage implosion and depressed housing market. But IT spending increased in 2007 from the prior year, and indications are if the other pressures don't worsen, it will remain strong in 2008. This combination of increased IT spending and lower company values created a ripe environment for acquisitions, and several big players in the software development market took advantage of this "perfect storm" of factors.

Consolidation was most pronounced in the security space, where IBM and Hewlett-Packard both made major acquisitions and sent a strong message that security would become an important stage of the development life cycle.

IBM made the first move, acquiring Watchfire, which sells the black-box testing tool AppScan, among other products. That put IBM in a leading position in offering tools that proactively ensure security—but only for a brief time, as HP followed up with the purchase of SPI Dynamics. These acquisitions created a market expectation that Microsoft, Oracle and/or Borland would follow suit to shore up their application security offerings, yet no announcements on that front have been made to date. Cenzic, Fortify and Ounce Labs top the list of remaining independents in that space.

For those scoring at home, IBM made two other high-profile purchases last year in the software development space, picking up application lifecycle software provider Telelogic for US$745 million, data management software maker DataMirror for $161 million, and business intelligence software company Cognos for around $5 billion. The BI space saw more consolidation last year with SAP purchasing Business Objects, maker of the Crystal reporting tools, for around US$6.8 billion.

With virtualization on everyone's lips last year, Citrix made a bold move by laying out US$500 million to acquire XenSource, the company behind the open source Xen hypervisor. SD Times noted how the cost of open source is going up, listing how Novell paid US$210 million for SuSE in 2003 and Red Hat paid US$350 million for JBoss in 2006.

But perhaps the biggest transaction of the year was one that ultimately was not consummated: Oracle put US$6.7 billion on the table to acquire BEA Systems, but the latter company's board of directors did not think the offer of $17 per share was sufficient, even though its one-year trading average was $13.62. The share price shot up to $18 after the offer was tendered. In October, Oracle took its bid down, stating BEA's counterproposal of $21 per share was "impossibly high." Yet at least one analyst, Lehman Brothers' Israel Hernandez, believes a deal still could happen—that it's a matter of when, not if.

Well, here's hoping for a healthy, prosperous 2008…one in which the housing market comes back to life, the crises in Iraq and the mortgage industry become settled, and tech spending keeps on keepin' on.

David Rubinstein is editor-in-chief of SD Times.

BIG-TICKET ITEMS

COMPANY	BUYER	PRICE
WebMethods	Software AG	$546 million
MetaMatrix	Red Hat	Undisclosed
Agile Software	Oracle	$495 million
Embarcadero	Thoma Cressey Bravo	$200 million

(In U.S. Dollars)

BUSINESS BRIEFS

Yahoo has become a platinum sponsor of the **Apache Software Foundation.** Yahoo had previously worked on the Apache HTTP Server and Lucene projects, and the company claims that many of its development teams are long-term contributors to Apache Hadoop, the open source platform for processing data on a cluster of commodity hardware . . . **LogiXML** has secured US$5 million from Updata Partners in an attempt to grow its Logi 8 Business Intelligence platform. Company officials said the funding will help accelerate growth and expand the platform's market reach. Updata Partners is a venture capital firm based out of Reston, Va., and Edison, N.J. . . . **IBM** is looking to increase its presence in smaller markets by boosting its budget for sales and marketing in developing countries by US$1.6 billion during the next three years. IBM officials said the company will target markets in Southeast Asia, Latin America, Eastern Europe, Africa and the Middle East. IBM is believed to have spent $20 million last year on sales in those markets, and the new initiative would bring that number up to approximately $500 million per year . . . U. S businesses lost US$3.2 billion in 2007 due to phishing attacks, according to a survey by **Gartner**. The survey found that 3.6 million adults lost money in phishing attacks in the year between August 2006 and August 2007, compared with 2.3 million the year before. The average dollar loss per incident declined to $886 from $1,244 lost in 2006, and 1.6 million adults recovered about 64 percent of their losses in 2007, up from 54 percent of losses that 1.5 million adults recovered in 2006, the survey said . . . Enterprise architecture and business process analysis tool provider **Mega International** has named Richard Burk, former chief architect for the U.S. government, to its advisory board. Burk was the chief architect and manager of the Federal Enterprise Architecture program, an effort to develop a standard, government-wide business and technology framework to align federal IT investments to improve government services.

EARNINGS: **Novell** reported fourth-quarter net revenue of US$245 million and net revenue of $932 million for fiscal year 2007, up slightly from 2006 net revenues of $919 million. Adjusted income from operations for the quarter was $20 million, up from the $18 million posted in 2006. In 2008 guidance, the company expected annual revenue between $920 million and $945 million. ▮

EVENTS CALENDAR

Macworld Conference & Expo — Jan. 14–18
San Francisco
IDG WORLD EXPO
www.macworldexpo.com

Southern California Linux Expo — Feb. 8–10
Los Angeles
SCALE INC.
www.socallinuxexpo.org

Black Hat DC — Feb. 18–21
Washington, D.C.
BLACK HAT AND CMP TECHNOLOGY
www.blackhat.com

Game Developers Conference — Feb. 18–22
San Francisco
CMP MEDIA
www.gdconf.com

FutureTest 2008 — Feb. 26–27
New York
BZ MEDIA
www.futuretest.net

Emerging Technology Conference — March 3–6
San Diego
O'REILLY MEDIA
conferences.oreillynet.com/etech

MIX 2008 — March 5–7
Las Vegas
MICROSOFT
www.visitmix.com/2008

BrainShare — March 16–21
Salt Lake City
NOVELL
www.novell.com/brainshare

EclipseCon 2008 — March 17–20
Santa Clara
ECLIPSE FOUNDATION
www.eclipsecon.org/2008

Secure Development World — March 25–26
Alexandria, Va.
SDW
www.securedevelopmentworld.com

Black Hat Europe — March 25–28
Amsterdam, Netherlands
BLAK HAT AND CMP TECHNOLOGY
www.blackhat.com

SLAM (Sales, Licensing, Alliances & Marketing) — April 3–4
Burlingame, Calif.
SOFTWARE BUSINESS
www.slamconference.com

Developer Relations Conference — April 7–8
Redwood City, Calif.
EVANS DATA
www.evansdata.com/drc

RSA Conference — April 7–11
San Francisco
RSA
www.rsaconference.com/2008/US

Software Test & Performance Conference — April 15–17
San Mateo, Calif.
BZ MEDIA
www.stpcon.com

For a more complete calendar of U.S. software development events, see www.bzmedia.com/calendar.

Information is subject to change. Send news about upcoming events to events@bzmedia.com.

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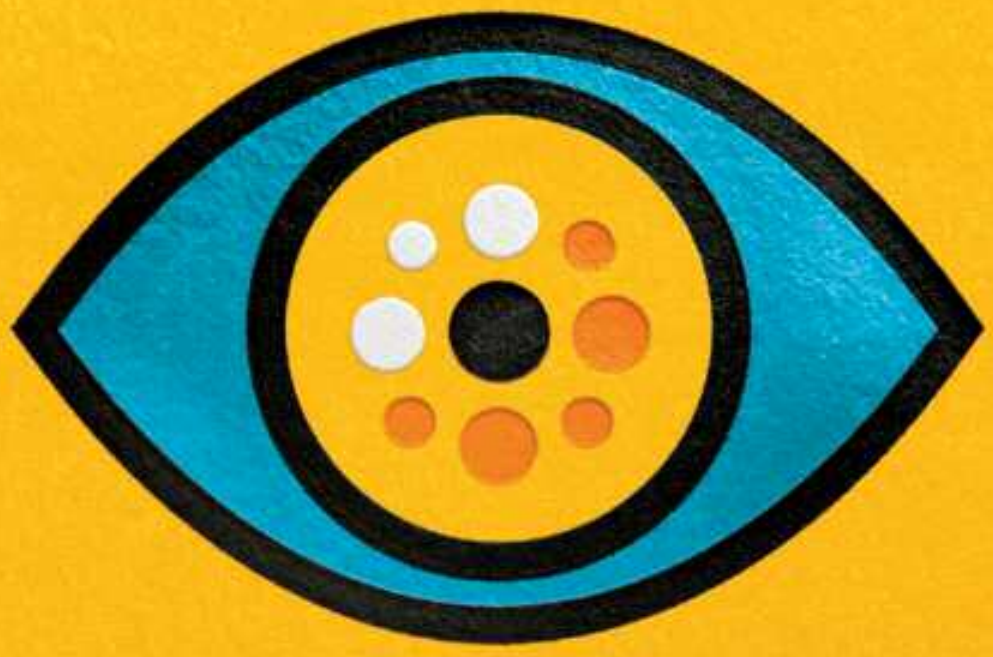

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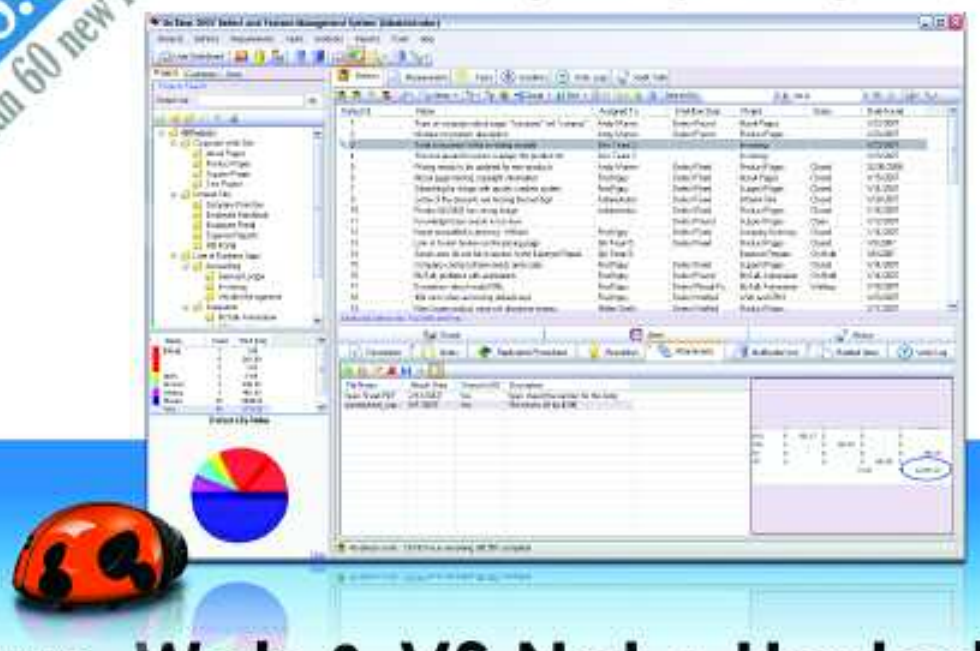

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